SERVICE MANUAL

ELECTRONIC CASH REGISTER

CE-2350 (EX-259)

JAN. 1995

CASIO®

INDEX

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1. FEATURES

The differece between CE-2300 and CE-2350 is as follows;

Item	CE-2300	CE-2350
Department number	8	19 x 2 (for using DEPT SHFT key)
PLU number	200	400
Clerk number	4	10
Post-finalization receipt printing	24 lines	52 lines
Total/Change indicators	Mounted	Nil
RAM capacity	8 KBytes	32 KBytes

2. SPECIFICATION

2-1. Electrical specifications

Power consumption :

Specification :	0.35A	
In operation	Max.	0.22A
Stanby	Min.	0.09A
Power OFF		0.08A

Memory protection

Back-up battery :	Mangan battery (UM-3 x 3 pcs.)
Back-up period :	1 year (25°C)
Battery life :	Replace the battery every year.

Clock & Calendar

Accuracy :	Within 120 sec. per month (25°C)
Auto calendar :	Effective until 2099 A.D.

2-2. Environmental specifications

Operating temperature :	0°C ~ 40°C
Operating humidity :	10 % ~ 90%
Storage temperature :	-25°C ~ 65°C
Storage humidity :	10% ~ 95%
Vibration strength :	1.5G (The machine must be inthe carton box.)

2-3. Principal components

CPU :	Name :	uPD75516GF-351-3B9
	Number of control bit :	4
	Internal RAM :	512x 4 bits
	Internal ROM :	12160 x 8 bits
	Main system clock :	4.19 MHz
	Sub system clock :	32.768 Khz

RAM :	Name :	LC36256PLL
	Capacity :	32 KB
Printer :	Name :	CR-710-001
	Print method :	Rubber-type inner-hummer printing system
	Receipt number :	2 receipt (Receipt & Journal)
	Print digit :	12 digits (Numeric : 10 digits, Symbol : 2 digits)
	Printing speed :	Approx. 2.4 lines/sec.
	MCBF :	1,500,000 lines
	Paper width :	W44.5 ± 0.5 mm
	Paper diameter :	83 mm or less
	Paper thickness :	0.06 ~ 0.09 mm
	Ink roll :	IR-93
	Ink roll life :	400,000 lines
Display :	Name :	LED (HDSP-5261)
	Number of digit :	8 digits (LED x 4 pcs.)
Power transformer :	Name :	TE-233-E4D
Keyboard :	Input system :	2 keys roll over
Drawer :	Name :	DL-2416 (D-15TC-A55SP-1*) M type drawer for U.S.A. DL-2351 (D-15TC-A54SP-1*) M type drawer for Canada

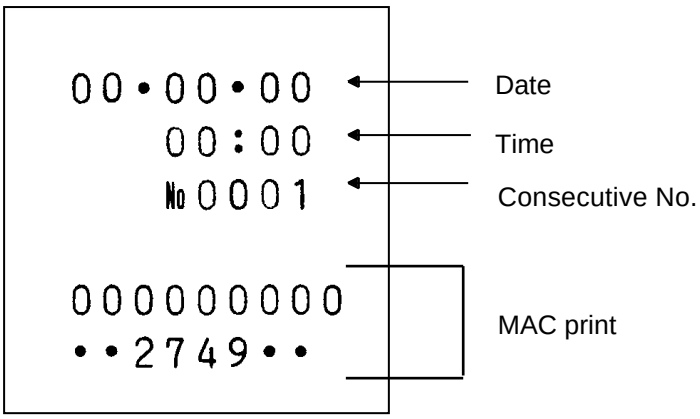
2-3.Option

Wet cover	Name :	WT-63
Power protection battery :		B-6
	Drive period :	Approx. 3 hours with the following conditions
	Drive conditions :	Processing time : 60 sec./ customer Quantity of sales : 8 items / customer Registered amounts : 3 digits / item Number of customer : 25 persons / hour
	Charging time :	8 hours to full charge

3. MAC (Memory All Clear) OPERATION

Procedure

(1) Plug the power cord into an outlet.
(2) Pressing the JOURNAL FEED button and turn the mode switch to Z position.
(3) Release the JOURNAL FEED button. After few seconds, MAC operation will be executed.
(4) The following receipt will be issued, if completed.



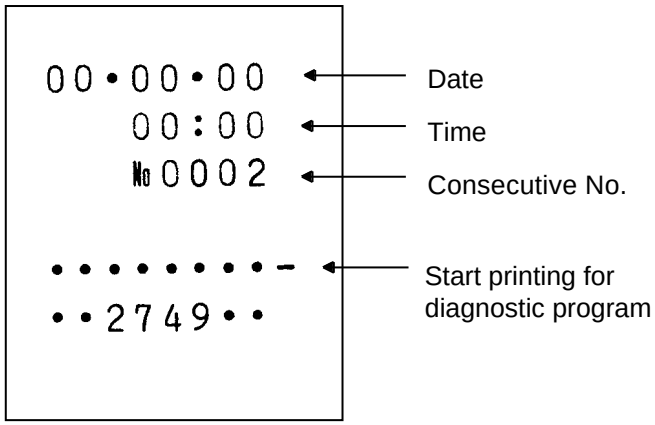
Note :
1. After initialize operation, the clock counts from 00 : 00 A.M. and also the calendar is started from 00 - 00 - 00.
2. If the memory of RAM is broken, the machine will be initialized after power on.

4. DIAGNOSTIC OPERATION

4-1. How To Start

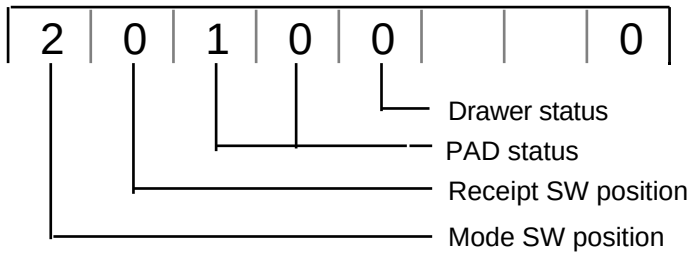
1) Plug the power cord into an outlet.
2) Execute the MAC operation.
3) Turn the mode switch to "Z" position.
4) Input 99999999 and press the sub total button.
5) Start the diagnostic program and issued following receipt.

Note : If you have done the registration after MAC operation, the Diagnostic program can not start.



4-2. Mode switch and PAD status display check

When the Clear key is pressed or changing the position of mode switch, the machine displays the mode switch position.



Drawer status : 1 : Drawer open
0 : Drawer close

PAD status :

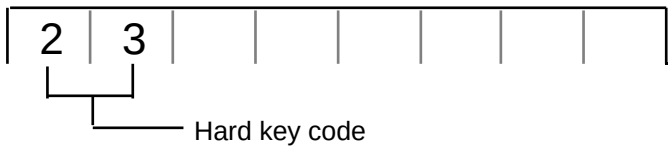
	PAD 1	PAD 2	
0 0	Short	Short	Canada
0 1	Open	Short	
1 0	Short	Open	
1 1	Open	Open	U.S.

Receipt switch position :
8 Receipt OFF
0 Receipt ON

Mode switch position : 1 : Z
2 : X
4 : REG
8 : RF

4-3. Hard key code check

When all keys except numerical keys, Clear key, RECEIPT FEED key, JOURNAL FEED key are pressed directly, the machine displays the hard key code as shown below.



Receipt FEED	Journal FEED
47	51
46	50
45	49
44	48

C	13	14
7	8	9
4	5	6
1	2	3
0	10	11

20	26	32	38	43
19	25	31	37	42
18	24	30	36	41
17	23	29	35	40
16	22	28	34	39
15	21	27	33	

4-4. Hard check function

Enter 1 digit from numeral key and press the sub total button (ST), the following Hard check function will be executed.

(1) 1+ST : Display, RAM, Drawer, Printer check
(2) 5+ST : RAM read only check
(3) 7+ST : Voltage check of memory back-up battery
(4) 8+ST : Print all characters
(5) 9+ST : Display the time

4-4-1. Display, RAM, drawer and printer check

Operation : 1 + ST

1) All segments turn on.

8	8	8	8	8.	8.	8.	8.

2) Date and time set

Set the following data in the machine automatically.

Date : 1st January, 1992
Time : 12:34:00

3) RAM write and read check

The machine writes data into RAM and read out the data to compare with written data.
When this check is finished correctly, the machine goes to check No. 4).
However, if an error is occurred, the machine sounds an error tone, prints the error receipt, and stops Hard check program.

Error receipt sample " -- -- "

4) Drawer open check

Open the drawer.

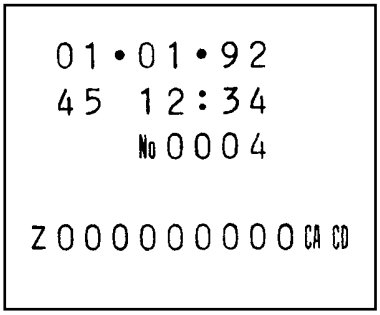
5) Printing check

Print the following character.

Z 0 0 0 0 0 0 0 0 0 CA CD

6) Receipt issue

The following receipt is issued.



7) Test display

7	6	5	4	3	2.	1	0

4-4-2. RAM read only check

Operation :5 + ST

Note : Be sure to execute the RAM write and read check (1 + ST) before this check.

The machine reads out the data to compare with written data until an error is occurred and brinks " -- " on the display during this check.
To stop this check, turn the mode switch to OFF position.
If an error is occurred, the machine sounds an error tone, prints " -- -- " on the receipt, and stops this check.

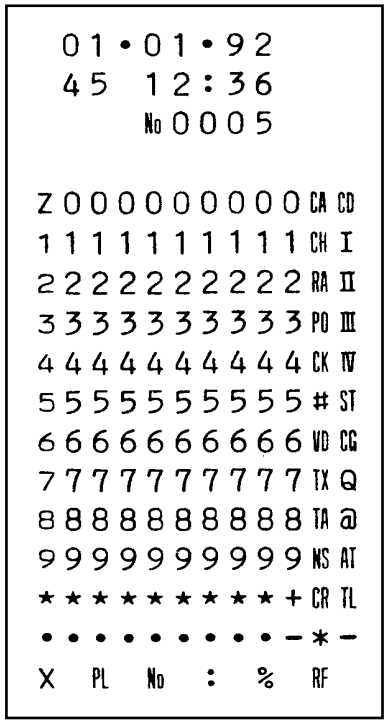
4-4-3. Voltage check of memory back-up battery

Operation :7 + ST

Display the voltage of back-up battery in real time. (Measurement is Volt (V) level.)
To stop this check, turn the mode switch to OFF position.

4-4-4. All characters print check

Operation : 8 + ST



4-4-5. Display the time

Operation : 9 + ST

The machine display the time.
To stop this check, press the Clear key.

1 2 -- 3 4 01 The time counts up.

If you make following operation, the machine resets the time data and starts again.
Operation : 9 9 + ST

4-4-6. How to release the diagnostic mode

Execute MAC operation.

5. OPTION CIRCUIT

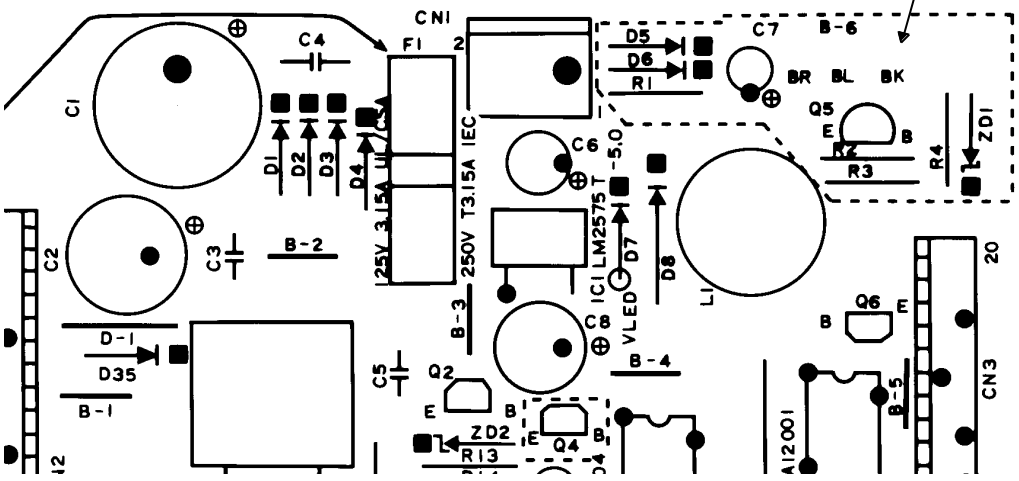
Power protection battery B-6

Power protection battery B-6 os available fro CE-2350.
However, interface circuit is not mounted the machine.
When you use the B-6, mount the following parts.

Parts list for interface

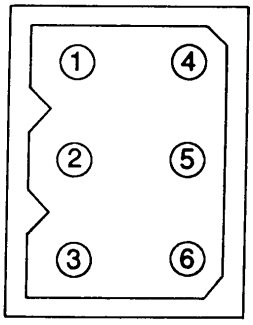
Code No.	Parts Name	Specification	Q'ty
2200 3577	Transistor	2SA1015(GR,O,Y)	1
2301 0011	Diode	1S2471	2
2310 3541	Zener diode	RD12EB2	1
2600 7313	Carbon film resistor	R-25-10K-J	3
2614 0552	Carbon film resistor	R-25-2K-J	1
2801 7098	Electrolytic capacitor	50RE2	1
6219 4553	Connector fixing plate	E311094-1	1
6236 6180	P1625-06P connector ass'y	E314531B-10(#22-200)	1

Interface circuit for B-6



Pin assignment for B-6 connector

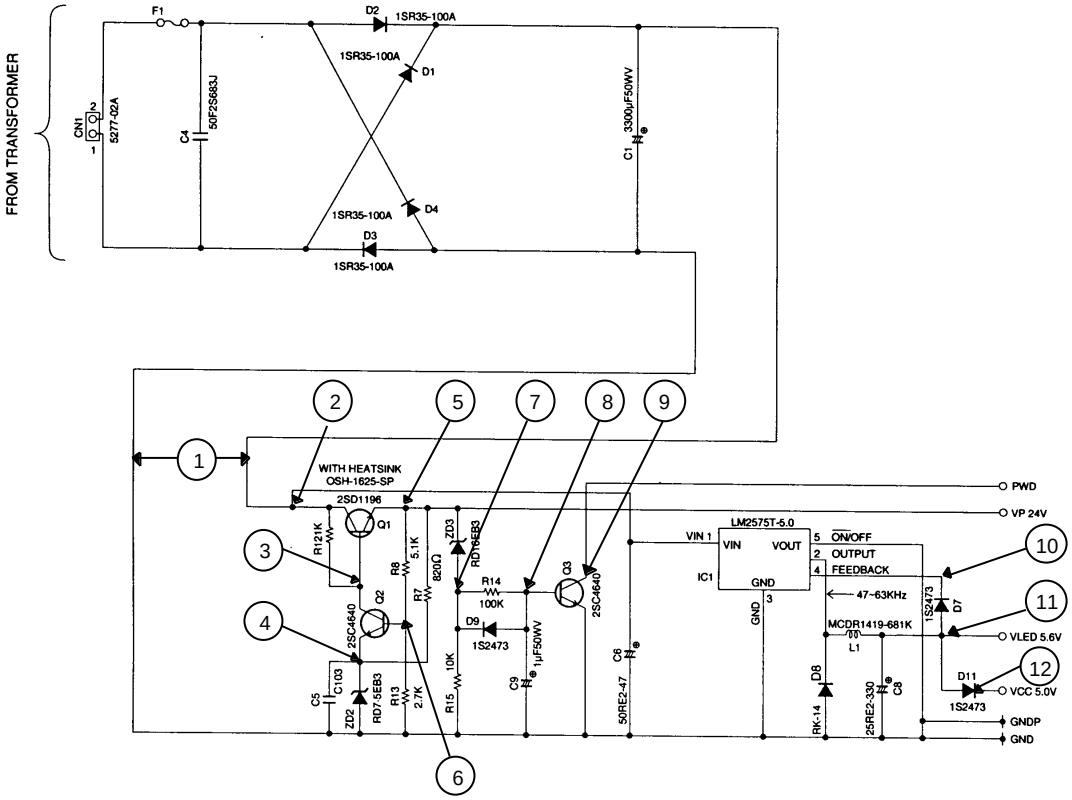
Pin layout



Pin No.	Description
1	F.G. (Green)
2	Not used
3	CS (Black)
4	GND (Blue)
5	Not used
6	VP (Brown)

6. CIRCUIT EXPLANATION

6-1. Power supply circuit



Q1 : Transistor for controlling voltage (VP)
Q2 : Transistor for voltage detection
Q3 : Transistor for controlling power down (PWD) signal
ZD2 : Zener diode for controlling base current of Q2
ZD3 : Zener diode for detecting power down (PWD) signal

After plug the AC cord into the outlet, the AC voltage (23.8V) appears at CN1 connector.
Then this voltage is rectified by the diode brige and it become constant voltage through the capacitor C1.

[Voltage VP]

A constant voltage (31.4V) appears on the " 2 " position. This voltage made from the constant voltage circuit consist of transistor Q1 and Q2, zener diode ZD2, resisror R7, R8, R12 and R13.

[Voltage VLED and VCC]

The voltage goes to pin No.1 of regurator IC1 and then it is out from pin No.2 of IC1 as stable voltage (5.6V).
Then this voltage down to 5 volts through the diode.
It is used for VCC (for logic) and VLED (for display drive).
Also, it goes to pin No.4 of IC1 and using to control the output voltage level.
Inductor L1 is used to stabilize the VCC voltage when the drawer opened.

[PWD signal]

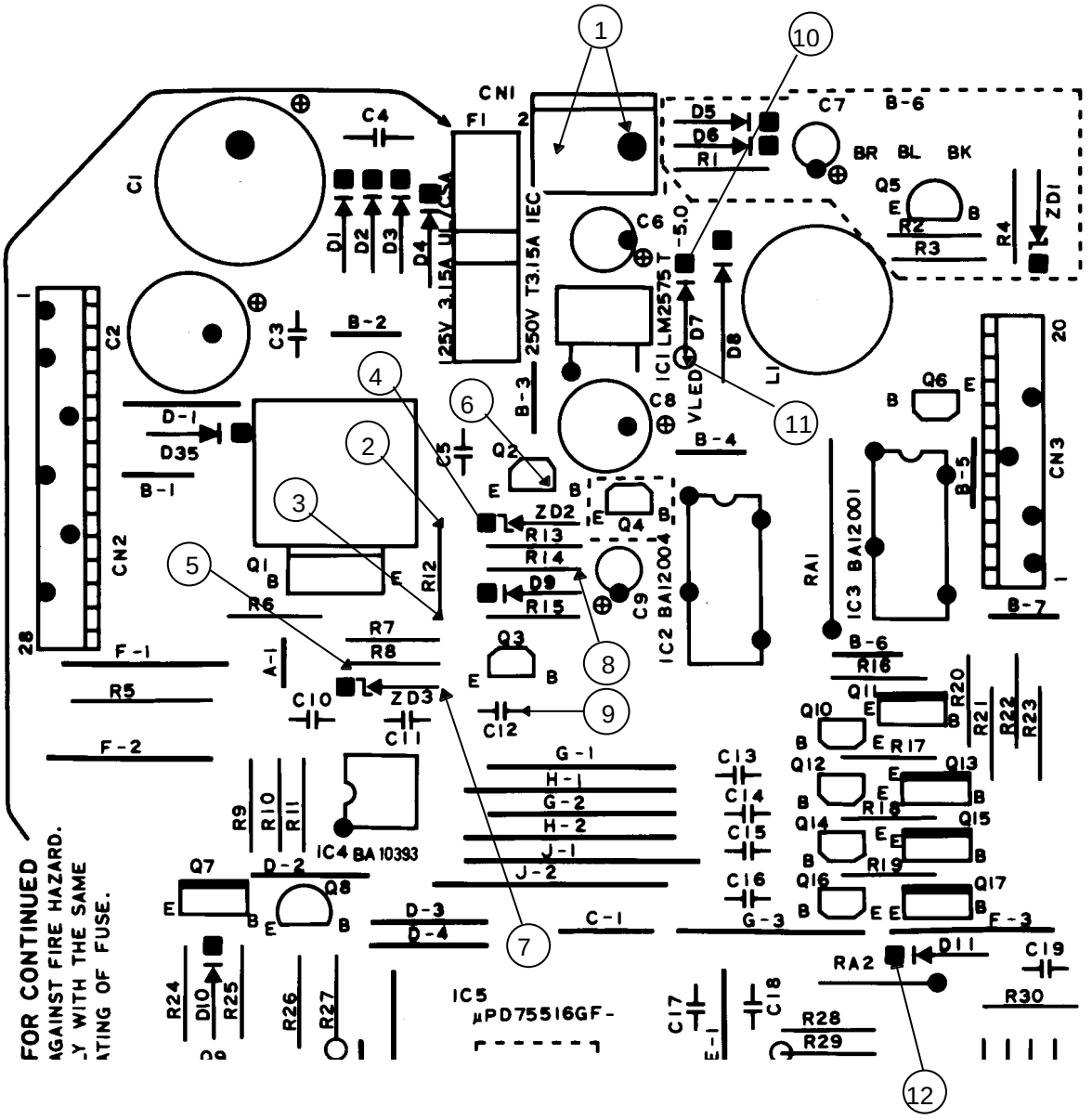
After plug the AC cord into outlet, VP voltage appears on the base terminal of transistor Q3.
When the VP exceeds 16 volts, Q3 is turned on by the differential voltage between base and emitter terminal of transistor Q3.
Then the PWD signal goes to GND level and informes " Power ON " to the CPU.
When the VP drops less than 16 volts, Q3 is turned off.
Then the PWD goes high level since the PWD is pulled up to VDD.
When the CPU receives " High " signal of PWD, CPU goes to " Power failure process ".

Note : During plug the Ac cord into outlet, all voltages are supplied to the PCB.
If you open the machine for repair, make sure plug off.

[Location for voltage check points]

Actual value on the E259-1 PCB (unitV)

Check point	1	2	3	4	5	6	7	8	9	10	11	12
Power ON	23.8(AC)	31.4	25.2	7.61	24	8.2	8.1	0.6	0	5	5.6	5
Power cord off	0	0	0	0	0	0	0	0	4	0	0	0



6-2. CPU (uPD75516GF-351-3B9)

Pin No.	Signal	Descriptions	In/Out	PW-ON level
1	AN0	Mode switch signal (RF,OFF,REG,X,Z) signal	In	
2	AVREF	VCC terminal (+5V)	-	
3	VDD	VDD terminal (+5V)	-	
4	VDD	VDD terminal (+5V)	-	
5	P113	Motor drive signal (M4)	Out	
6	P112	Motor drive signal (M3)	Out	
7	P111	Motor drive signal (M2)	Out	
8	P110	Motor drive signal (M1)	Out	
9	P103	Stamp / Clock signal	Out	
10	P102	RAM address signal (A12) / Receipt and Journal feed (FEED)	Out	
11	P101	RAM address signal (A09/A11) / Head drive signal (HD6)	Out	
12	P100	RAM address signal (A08/A10) / Head drive signal (HD5)	Out	
13	P93	RAM address signal (A03/A07) / Head drive signal (HD4)	Out	
14	P92	RAM address signal (A02/A06) / Head drive signal (HD3)	Out	
15	P91	RAM address signal (A01/A05) / Head drive signal (HD2)	Out	
16	P90	RAM address signal (A00/A04) / Head drive signal (HD1)	Out	
17	SI1/P83	Key input signal (Ki7)	In	
18	SO1/P82	Key input signal (Ki6)	In	
19	SCK1/P81	Key input signal (Ki5)	In	
20	PP0/P80	Key input signal (Ki4)	In	
21	KR7/P73	Not used	Out	
22	KR6/P72	Display segment signal (SG1)	Out	
23	KR5/P71	Display segment signal (SF1)	Out	
24	KR4/P70	Display segment signal (SE1)	Out	
25	KR3/P63	Display segment signal (SD1)	Out	
26	KR2/P62	Display segment signal (SC1)	Out	
27	KR1/P61	Display segment signal (SB1)	Out	
28	KR0/P60	Display segment signal (SA1)	Out	
29	P53	Display segment signal (SDP0)	Out	
30	P52	Display segment signal (SG0)	Out	
31	P51	Display segment signal (SF0)	Out	
32	P50	Display segment signal (SE0)	Out	
33	VSS	GND terminal	-	
34	P43	Display segment signal (SD0)	Out	
35	P42	Display segment signal (SC0)	Out	
36	P41	Display segment signal (SB0)	Out	
37	P40	Display segment signal (SA0)	Out	
38	P33	Display segment coomon signal (Dg4)	Out	
39	P32	Display segment coomon signal (Dg3)	Out	
40	P31	Display segment coomon signal (Dg2)	Out	
41	P30	Display segment coomon signal (Dg1)	Out	
42	P23/BUZ	Buzzer signal	Out	
43	P22/PCL	Motor drive signal (for paper feeding)	Out	
44	P21	Step motor common signal (for print wheel)	Out	
45	P20/PT00	Drawer open signal (DW)	Out	
46	P13/TI0	Key input signal (Ki9)	In	
47	P12/INT2	Key input signal (Ki8)	In	
48	P11/INT1	Power down signal	In	
49	P10/INT0	Reset pulse from printer	In	
50	P03/SI0/SB1	Key input signal (Ki3)	In	

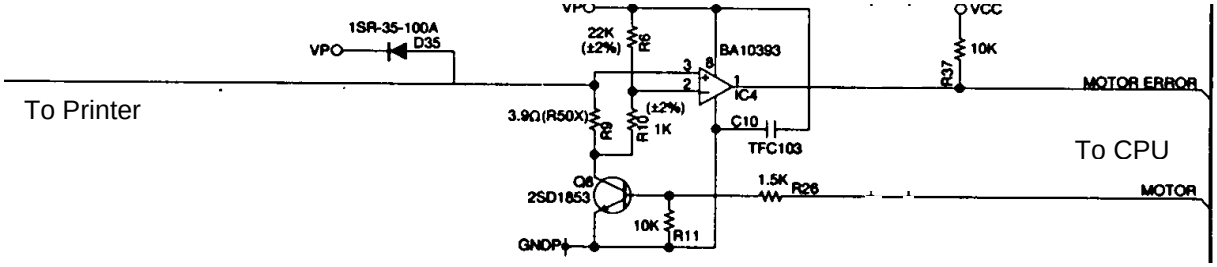
Pin No.	Signal	Descriptions	In/Out	PW-ON level
51	P02/SO0/SB0	Key input signal (Ki2)	In	
52	P01/SCK0_	Key input signal (Ki1)	In	
53	P00/INT4	Key input signal (Ki0)	In	
54	VSS	GND terminal	-	
55	XT1	Sub system clock signal (32.768KHz)	In	
56	XT2	Sub system clock signal (32.768KHz)	In	
57	IC	GND terminal	-	
58	X1	Main system clock signal (4.19MHz)	In	
59	X2	Main system clock signal (4.19MHz)	In	
60	RESET_	Initilize signal	In	
61	P143	RAM write enable signal (WE_)	Out	
62	P142	RAM chip enable signal (CE_)	Out	
63	P141	Journal feed common signal	Out	
64	P140	Receipt feed common signal	Out	
65	P133	RAM data signal (D3)	In/Out	
66	P132	RAM data signal (D2)	In/Out	
67	P131	RAM data signal (D1)	In/Out	
68	P130	RAM data signal (D0)	In/Out	
69	P123	Key common signal (Kc02)	Out	
70	P122	Key common signal (Kc01)	Out	
71	P121	Key common signal (Kc00)	Out	
72	P120	RAM address signal (A14)	Out	
73	AVSS	GND terminal	-	
74	P153/AN7	Receipt ON/OFF signal	In	
75	P152/AN6	Motor error signal	In	
76	P151/AN5	Pad data signal (PAD2)	In	
77	P150/AN4	Pad data signal (PAD1)	In	
78	AN3	GND terminal	-	
79	AN2	Battery voltage detection terminal	In	
80	AN1	Drawer sensor signal	In	

Note : The ìPW-ON levelî is measured under following conditions.

1) Mode switch is REG position.
2) The display is the time.
3) Receipt switch is ON position.
4) PAD1 and Pad2 are both open.

6-3. Motor error detection circuit

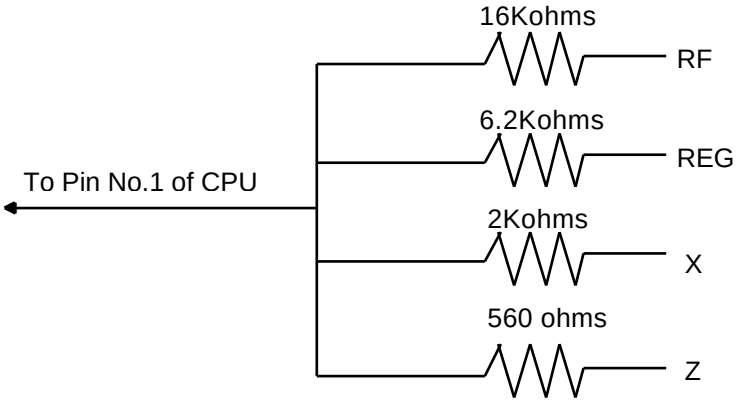
When the CPU output motor signal, transistor Q8 becomes on and the voltage level at “A” point becomes GND. Then, paper feeding motor rotate. Normally, pin No.1 of IC4 appears low signal.
IC4 detects differential voltage between pin No.2 and 3.
In case pin No.3 is higher than No.2, output(Pin No.1) signal is hogh.
If motor happens over load (Paper jam etc.), over load current (250mA) runs resistor R9.
So, “A” point voltage lebel becomes high.
Then IC4 outputs high signal and then CPU knows motor error occured.
When the CPU receives “Motor error signal”, CPU stops motor signal.



6-4. Mode key switch status read

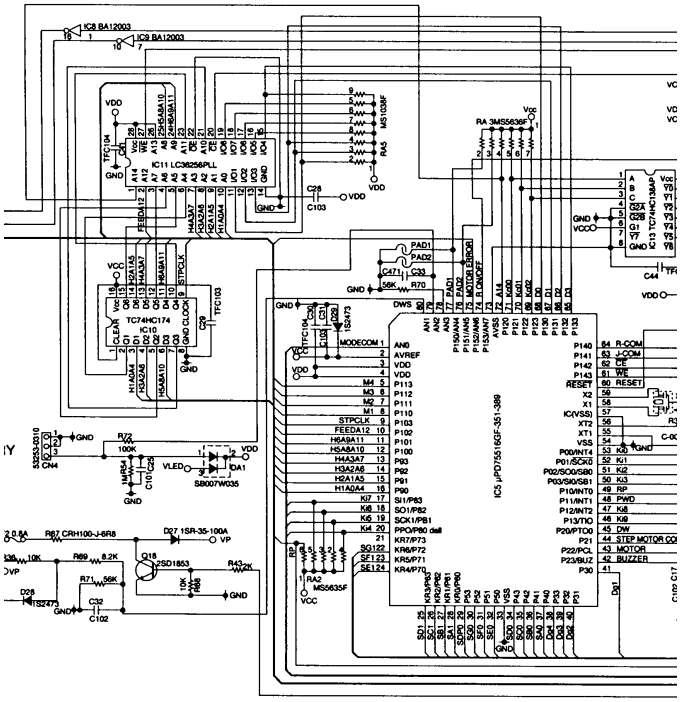
The CPU knows the mode switch status by voltage level of pin No.1.
the voltage level is down by resistor. Each voltage is as shown below.

Mode	REG	X	Z	RF	OFF
Voltage (V	196	3.29	4.36	0.98	0



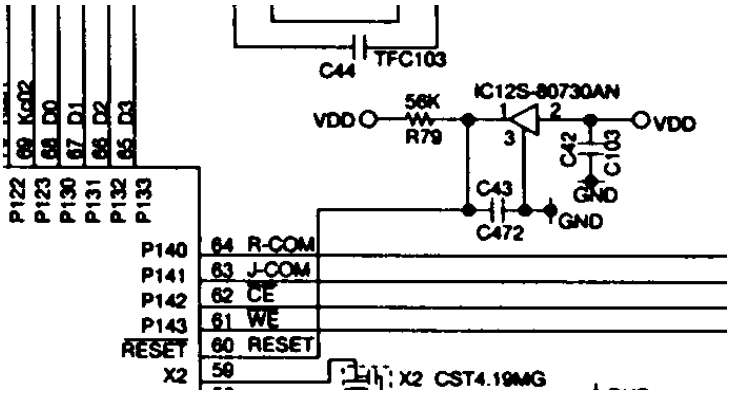
6-5. RAM address/head drive signal switching circuit

The CPU is used the port for RAM address (A0~A11) and head drive signal (HD1~HD6).
To select the RAM address and head drive signal, CPU use “STEP MOTOR COM” signal.
When CPU wants to read the RAM chips, CPU stops “STEP MOTOR COM” signal.
The CPU controls RAM address (A0~A12) using IC10 because of CPU has 7 ports.
First, CPU sneds RAM address (A4~A7,A10,A11) to IC10, and IC10 store the address data.
Next, CPU send RAM address (A0~A3,A8,A9,A12,A14) to RAM.
At the same time, CPU sendsclock signal to IC10.
Then, IC10 outputs stored data (A4~A7,A10,A11). In this way, CPU controls RAM address.



6-6. Initilize IC (Reset IC)

When the voltage level on pin No.60 of CPU is not sabilized, CPU does not work properly in rare case.
Therefore, this machine uses the initilize IC for stabilizing the voltage.
Even the voltage level of VDD (Pin No.2) is changed of Initilize IC, initialize IC output stabilized 5 volts from pin No.1.

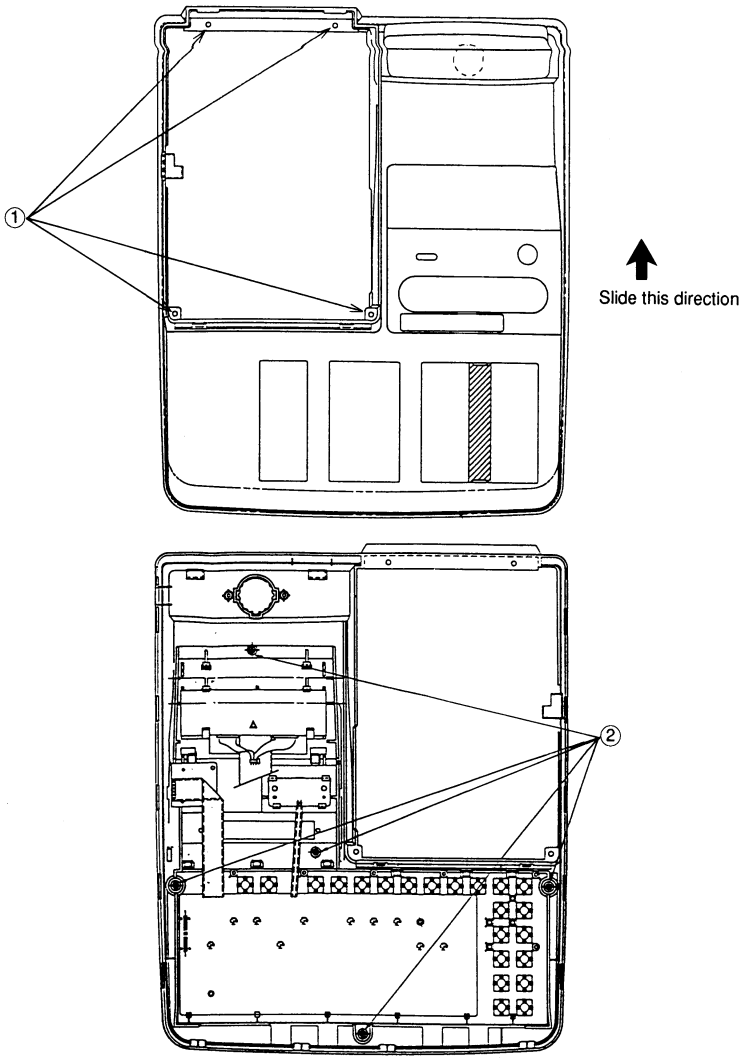


6-7: Printer error condition of CPU

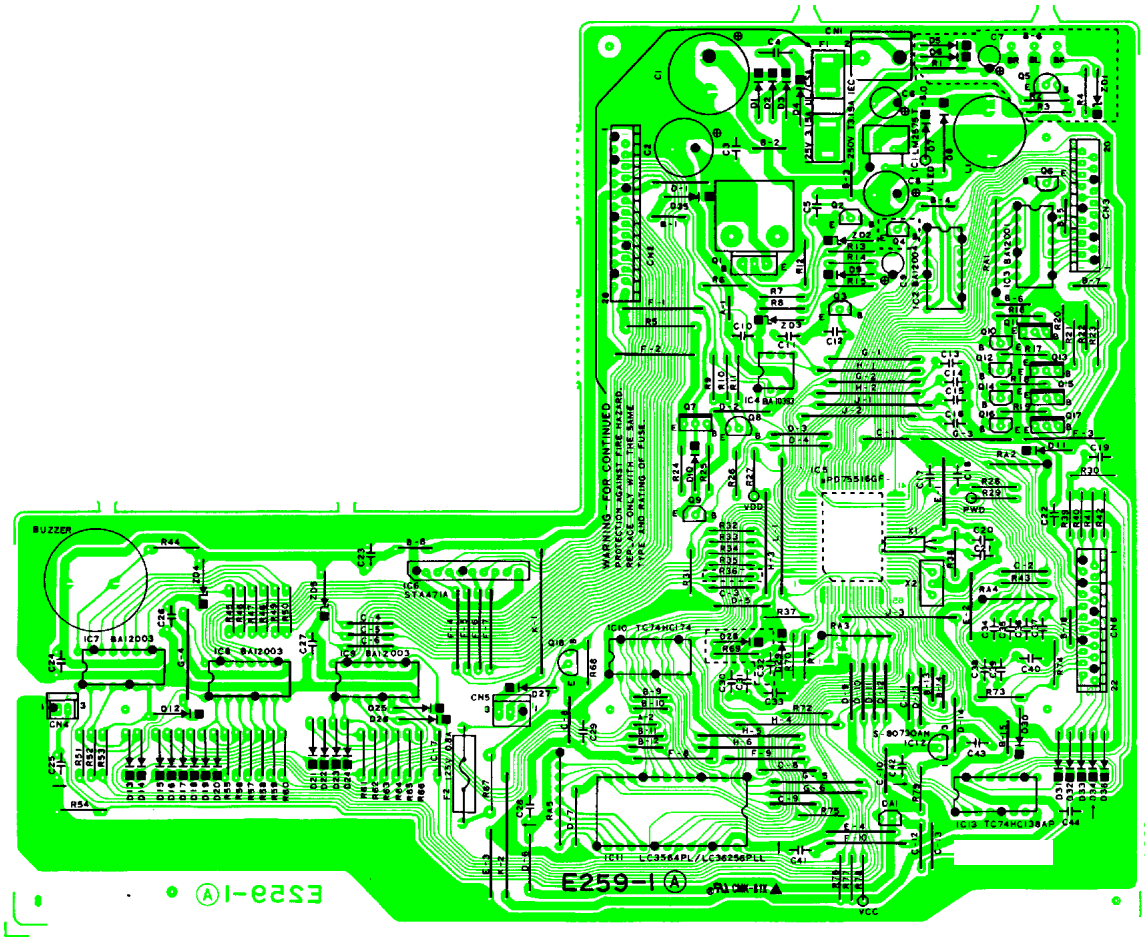
1). When motor error signal comes, CPU knows printer error.
2). When reset pulse does not come within a period of time which is controlled by CPU, CPU knows printer error. Then CPU stops printing.
CPU selects printing character by software.

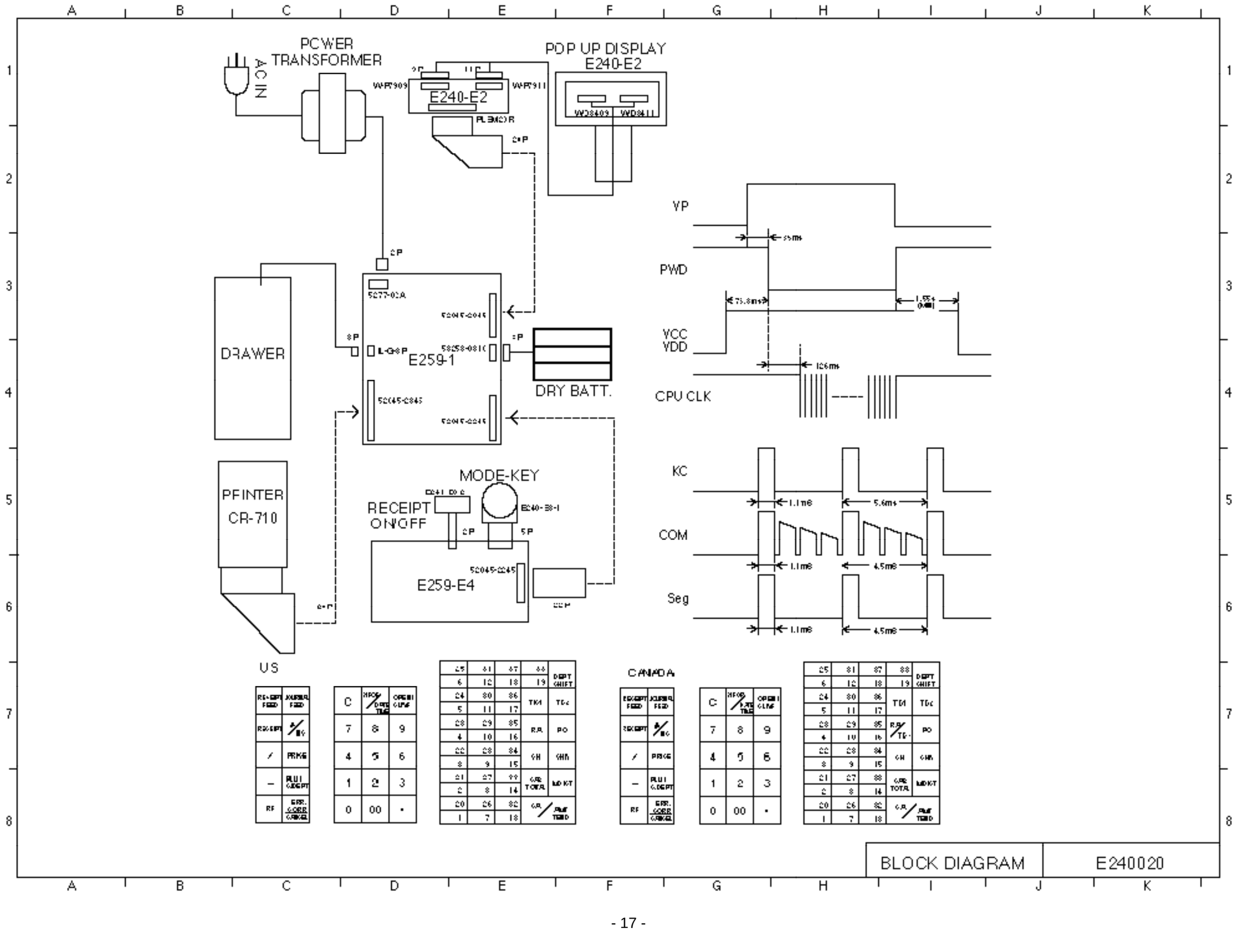
7. TO OPEN THE UPPER CASE

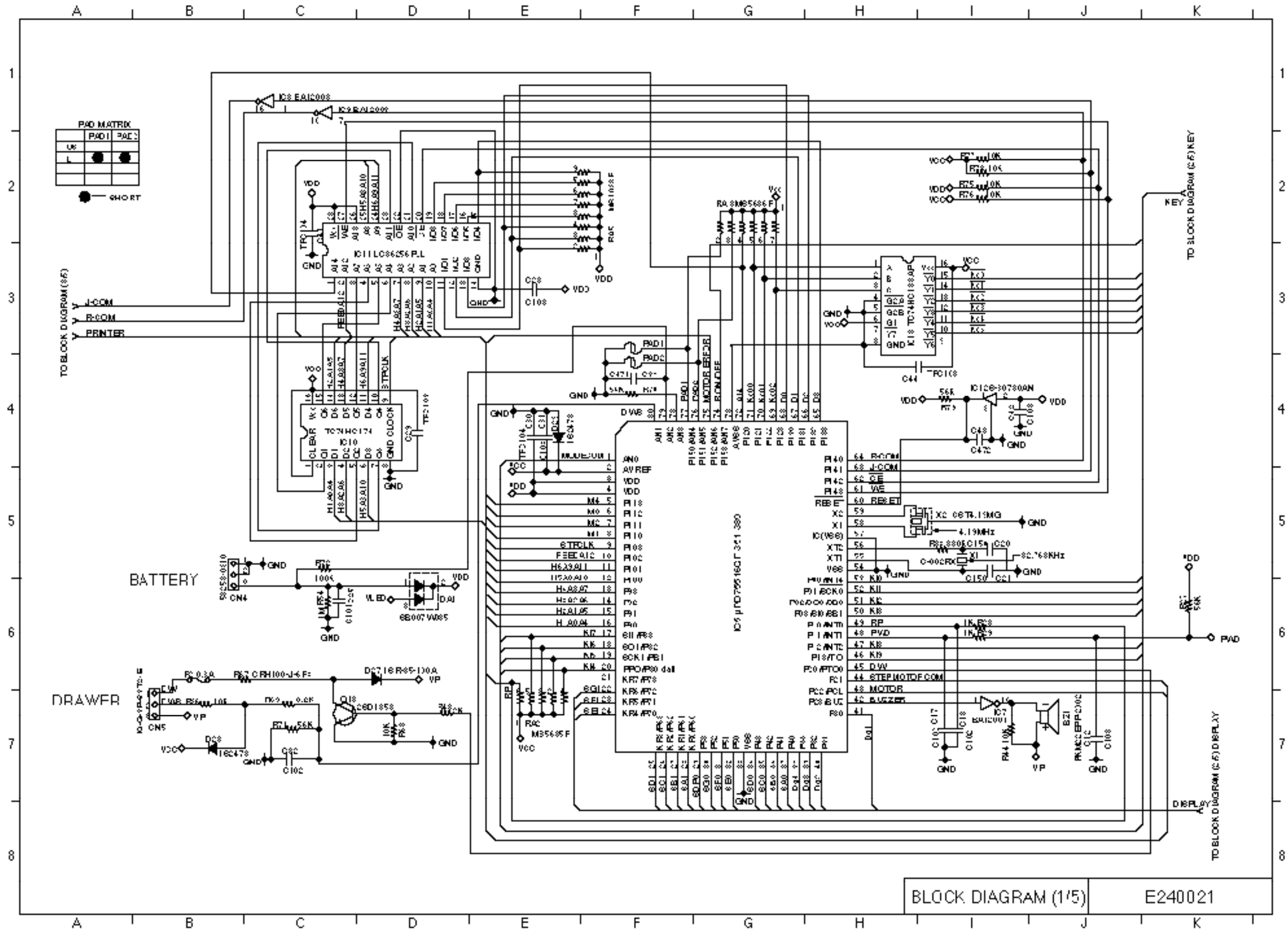
1. Remove the printer cover.
2. Remove the 4 pcs of screw No.1 near the printer unit.
3. Slide the upper case to backward and pull it up, and then remove it.
4. Remove the 5 pcs of screw No.2 to separate the keyboard.

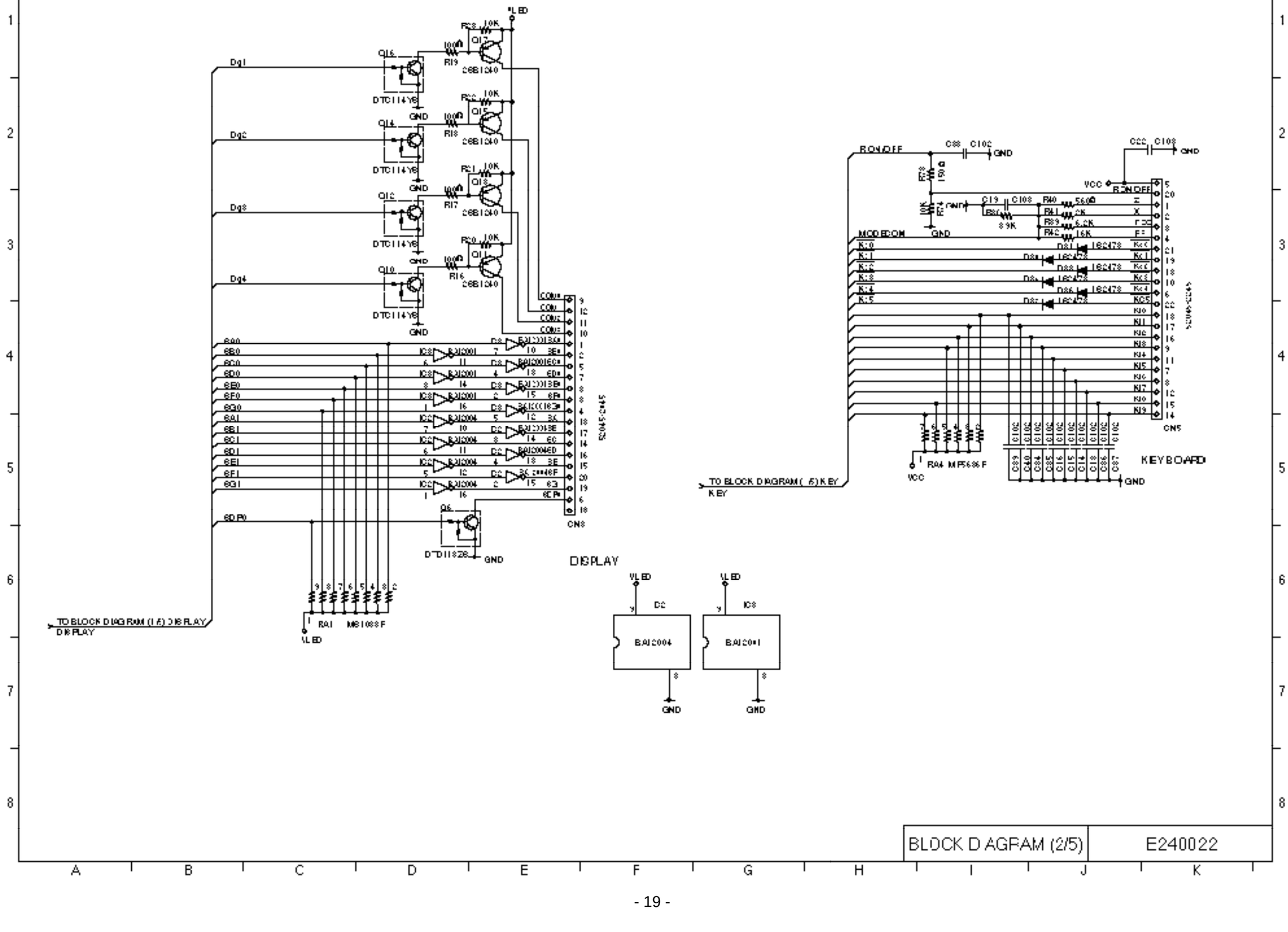


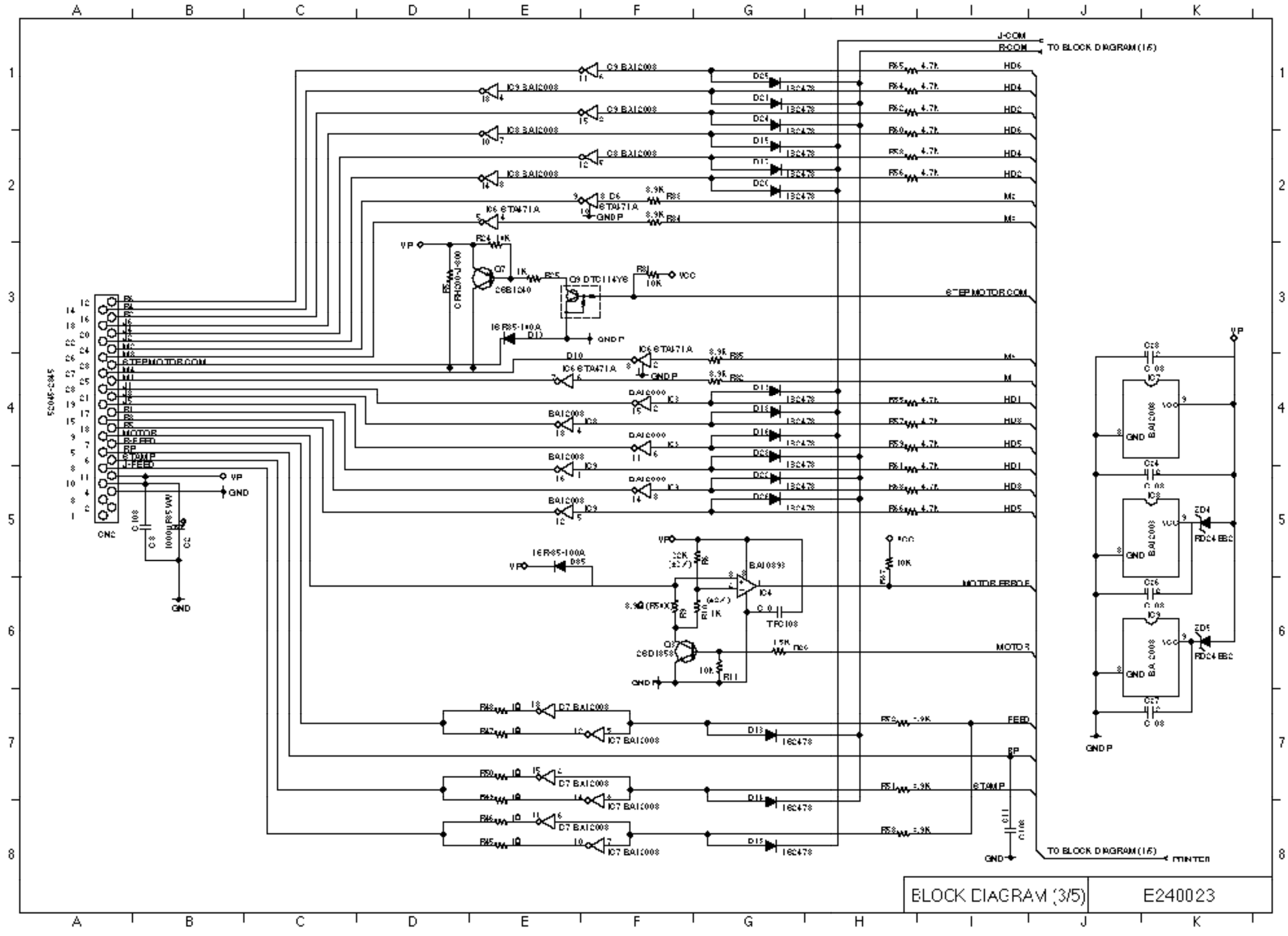
8. PCB LAYOUT

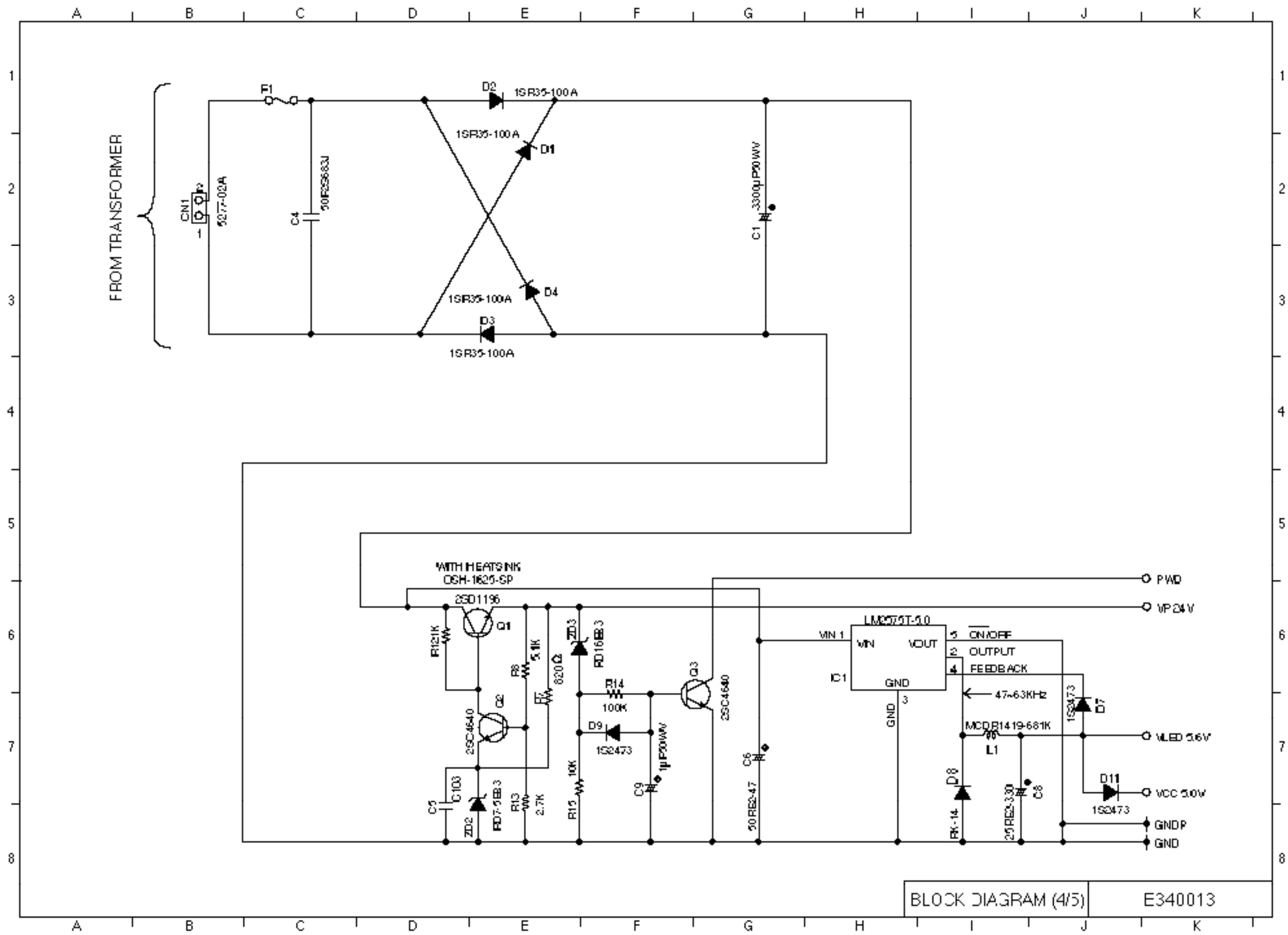



POWER TRANSFORMER
AC IN
POP UP DISPLAY
E240-E2
WR7909
WR7911
E240-E2
PLEMOIR
WD8409
WD8411
2P
2P
5277-02A
52045-0245
8P
IL-G8P
E259-1
58258-0810
5P
DRAWER
52045-0245
52045-0245
DRY BATT.
PRINTER
CR-710
MODE-KEY
E240-38-1
RECEIPT
ON/OFF
2P
5P
E259-E4
52045-0245
US
CANADA
VP
PWD
VCC
VDD
CPU CLK
KC
COM
Seg
1.1mS
5.6mS
4.5mS
BLOCK DIAGRAM
E240020


PAD MATRIX
PAD1
PAD2
SHORT
TO BLOCK DIAGRAM (5/5)
J-COM
R-COM
PRINTER
BATTERY
DRAWER
CN4
CN5
PAD1
PAD2
MOTOR_BREAK
R_ON/OFF
DVR
STROBE
FEED
STBCLK
BUZZER
KEY
DISPLAY
TO BLOCK DIAGRAM (5/5) KEY
TO BLOCK DIAGRAM (5/5) DISPLAY
BLOCK DIAGRAM (1/5)
E240021


*LED
Dg1
Dg2
Dg3
Dg4
Q16
Q14
Q12
Q10
DTC114YS
GND
R18 10K
R19 100
R20 10K
R21 100
R22 10K
R23 100
R24 10K
R25 100
2SB1240
Q13
Q15
Q17
Q19
SA0
SB0
SC0
SD0
SE0
SF0
SG0
SA1
SB1
SC1
SD1
SE1
SF1
SG1
SDP0
BAJ2001
BAJ2004
BAJ2004D
BAJ2004E
BAJ2004F
BAJ2013E
BAJ2013B
BAJ2013C
BAJ2013D
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
COM0
COM1
COM2
COM3
CN8
Q6
DTD114ES
RA1 MB1088F
VLED
TO BLOCK DIAGRAM (1/5) DISPLAY
DISPLAY
DISPLAY
VLED
VLED
DC
IC8
BAJ2004
BAJ2001
GND
GND
R/ON/OFF
C88 C102
GND
R38 150Ω
R24 10K
GND
C19 C103
R39 9K
VCC
R/ON/OFF
R40 560Ω
R41 2K
R39 5.6K
R42 16K
MODE/ON
K10
K11
K12
K13
K14
K15
D81 1SS178
D84 1SS178
D88 1SS178
D85 1SS178
D86 1SS178
D87 1SS178
KC0
KC1
KC2
KC3
KC4
KC5
KI0
KI1
KI2
KI3
KI4
KI5
KI6
KI7
KI8
KI9
CN5
R44 MP5698F
VCC
C89 C90 C84 C85 C16 C15 C14 C18 C86 C87
C101
KEYBOARD
TO BLOCK DIAGRAM (5) KEY
KEY
GND
BLOCK DIAGRAM (2/5)
E240022


J-COM
R-COM
TO BLOCK DIAGRAM (1/5)
STEPMOTOR.COM
MOTOR
R-FEED
RP
STOMP
J-FEED
VP
GND
MOTOR.FEED
FEED
TO BLOCK DIAGRAM (1/5)
PRINTER
BLOCK DIAGRAM (3/5)
E240023


FROM TRANSFORMER
CN1
5277-02A
F1
C4
50F2S683J
D2
1SR35-100A
D1
1SR35-100A
D4
1SR35-100A
D3
1SR35-100A
C1
3300μF50WV
WITH HEATSINK
OSH-1625-SP
2SD1196
Q1
R121K
R8
5.1K
820Ω
ZD3
RD16EB3
R14
100K
Q3
2SC4640
Q2
2SC4640
D9
1S2473
1μF50WV
C6
50RB2-47
C5
C103
ZD2
RD7.5EB3
R13
2.7K
R15
10K
C9
LM2576T-5.0
VIN 1
VIN
VOUT
IC1
GND
3
5 ON/OFF
2 OUTPUT
4 FEEDBACK
47~63KHz
MCDR1419-681K
L1
1S2473
D7
D8
RK-14
25RB2-330
C8
D11
1S2473
PWD
VP 24V
VLED 5.6V
VCC 5.0V
GNDP
GND
BLOCK DIAGRAM (4/5)
E340013

Location No.	Specification
IC 1	LM2575T-5.0LB03
IC 2	BA12004
IC 3	BA12001
IC 4	BA10393
IC 5	μPD75516GF-585-3B9
IC 6	STA471A
IC 7	BA12003
IC 8	BA12003
IC 9	BA12003
IC 10	TC74HC174AP
IC 11	LC3E256PLL
IC 12	S-8073JAN
IC 13	TC74HC138AP
R1	Nil
R2	Nil
R3	Nil
R4	Nil
R5	CRH200-FH24-J-301
R6	CR-25-22KΩG-T
R7	R50XT-J8J122
R8	CR-25-5.1KΩJ-T
R9	R50XT-J8J3R9
R10	CR-25-1KΩG-T
R11	CR-25-10KΩJ-T
R12	CR-25-1KΩJ-T
R13	CR-25-2.7KΩJ-T
R14	CR-25-100KΩJ-T
R15	CR-25-10KΩJ-T
R16	CR-25-100ΩJ-T
R17	CR-25-100ΩJ-T
R18	CR-25-100ΩJ-T
R19	CR-25-100ΩJ-T
R20	CR-25-10KΩJ-T
R21	CR-25-10KΩJ-T
R22	CR-25-10KΩJ-T
R23	CR-25-10KΩJ-T
R24	CR-25-10KΩJ-T
R25	CR-25-1KΩJ-T
R26	CR-25-1.5KΩJ-T
R27	CR-25-56KΩJ-T
R28	CR-25-1KΩJ-T
R29	CR-25-1KΩJ-T
R30	CR-25-3.9KΩJ-T
R31	CR-25-10KΩJ-T
R32	CR-25-3.9KΩJ-T
R33	CR-25-3.9KΩJ-T
R34	CR-25-3.9KΩJ-T

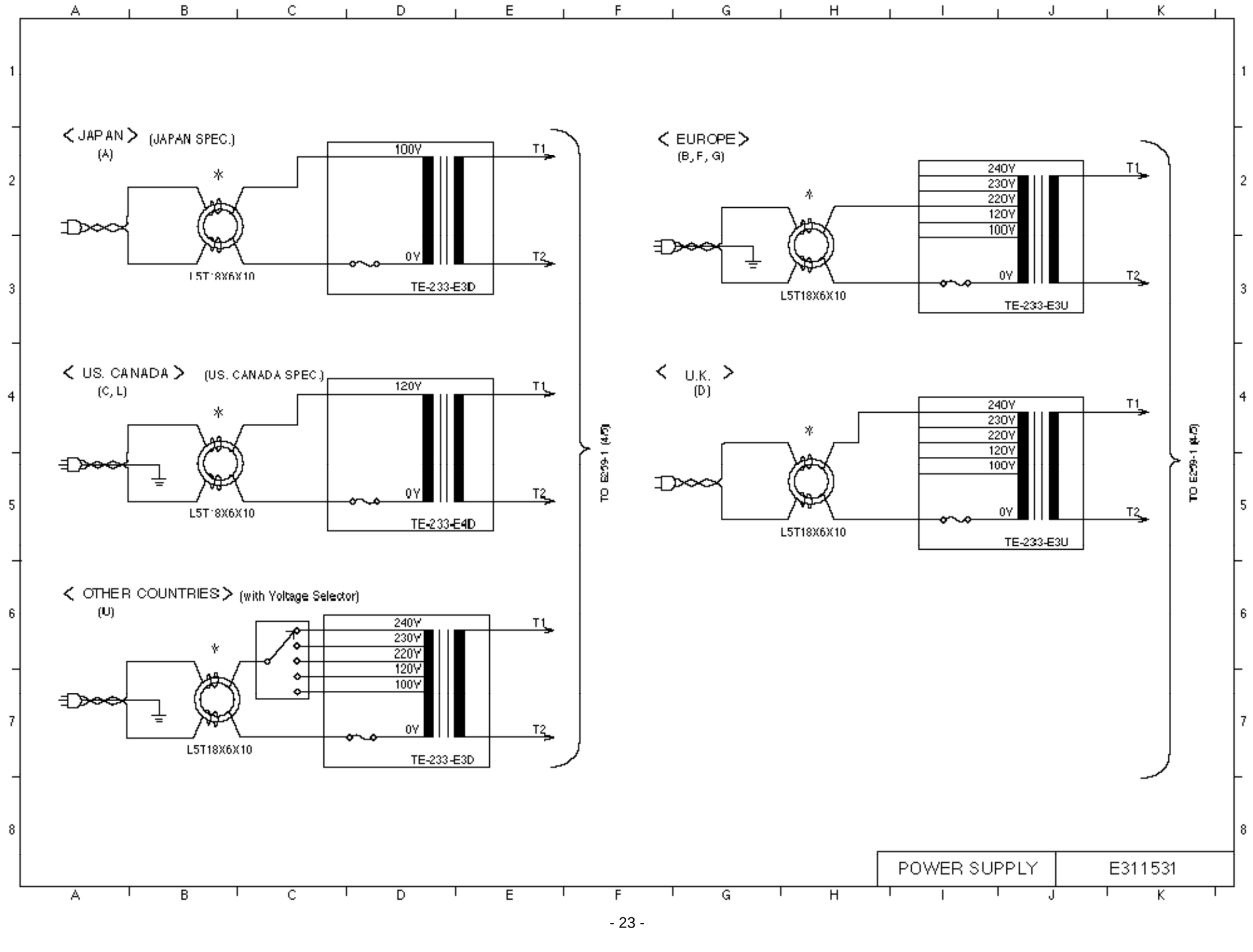
Location No.	Specification
R35	CR-25-3.9KΩJ-T
R36	CR-25-10KΩJ-T
R37	CR-25-10KΩJ-T
R38	CR-25-330KΩJ-T
R39	CR-25-6.2KΩJ-T
R40	CR-25-560ΩJ-T
R41	CR-25-2KΩJ-T
R42	CR-25-16KΩJ-T
R43	CR-25-2KΩJ-T
R44	CR-25-10KΩJ-T
R45	CR-25-1ΩJ-T
R46	CR-25-1ΩJ-T
R47	CR-25-1ΩJ-T
R48	CR-25-1ΩJ-T
R49	CR-25-1ΩJ-T
R50	CR-25-1ΩJ-T
R51	CR-25-3.9KΩJ-T
R52	CR-25-3.9KΩJ-T
R53	CR-25-3.9KΩJ-T
R54	CR-25-1MΩJ-T
R55	CR-25-4.7KΩJ-T
R56	CR-25-4.7KΩJ-T
R57	CR-25-4.7KΩJ-T
R58	CR-25-4.7KΩJ-T
R59	CR-25-4.7KΩJ-T
R60	CR-25-4.7KΩJ-T
R61	CR-25-4.7KΩJ-T
R62	CR-25-4.7KΩJ-T
R63	CR-25-4.7KΩJ-T
R64	CR-25-4.7KΩJ-T
R65	CR-25-4.7KΩJ-T
R66	CR-25-4.7KΩJ-T
R67	CRH100-FH11-J-3R8
R68	CR-25-10KΩJ-T
R69	CR-25-6.2KΩJ-T
R70	CR-25-56KΩJ-T
R71	CR-25-56KΩJ-T
R72	CR-25-100KΩJ-T
R73	CR-25-150ΩJ-T
R74	CR-25-10KΩJ-T
R75	CR-25-10KΩJ-T
R76	CR-25-10KΩJ-T
R77	CR-25-10KΩJ-T
R78	CR-25-10KΩJ-T
R79	CR-25-56KΩJ-T

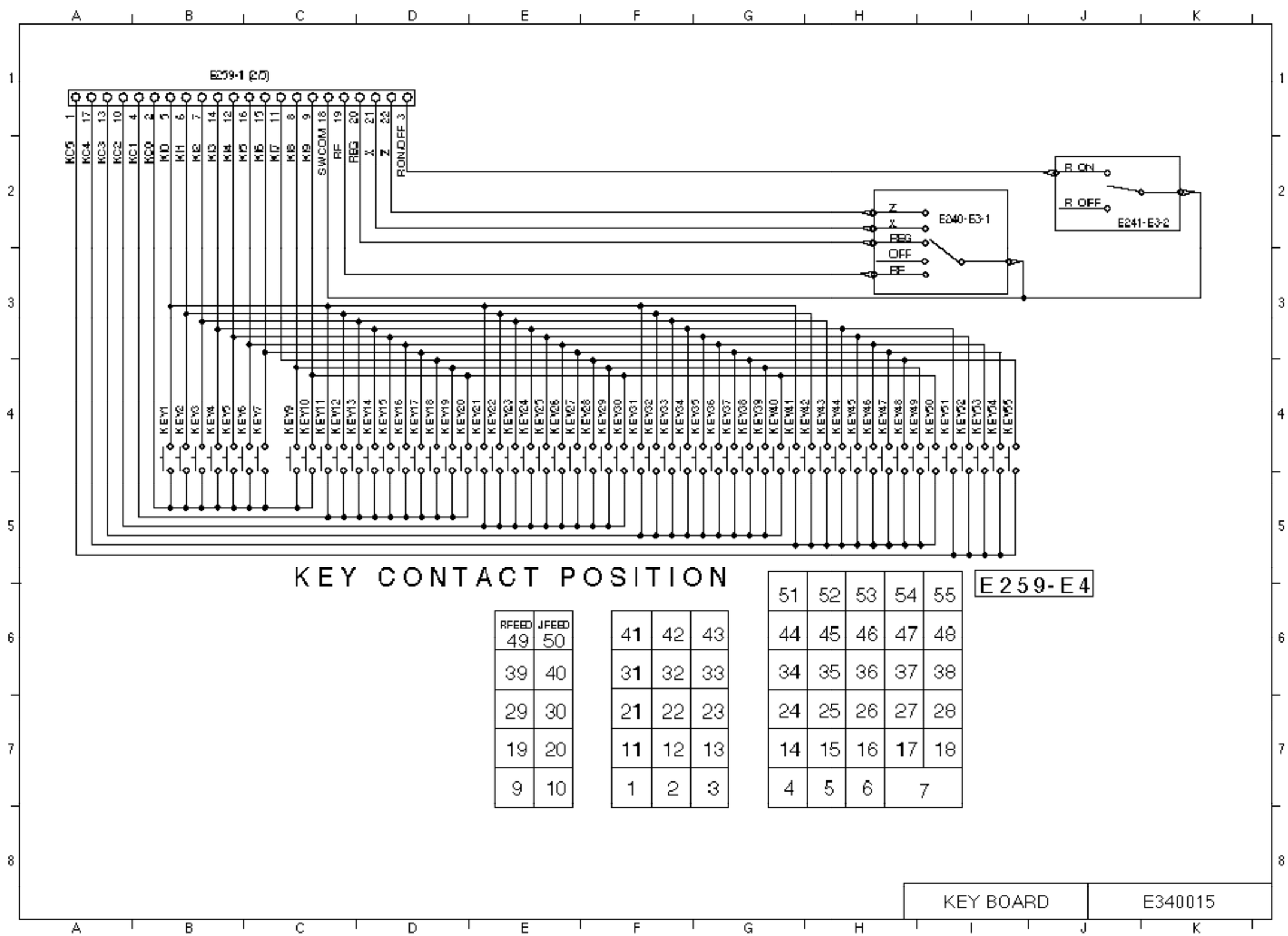
Location No	Specification
RA1	MS103EF
RA2	MS563EF
RA3	MS563EF
RA4	MS563EF
RA5	MS103EF
C1	RE3-50V332M
C2	RE2-35V102M
C3	HE12TJYB103K
C4	5CF2S563J
C5	HE12TJYB103K
C6	RE2-50V470M
C7	Nil
C8	RE2-25V331M
C9	RE2-50V010M
C10	ECQ-B1H-103-KF
C11	HE12TJYB103K
C12	HE12TJYB103K
C13	HE5JTJYB102K
C14	HE5JTJYB102K
C15	HE5JTJYB102K
C16	HE5JTJYB102K
C17	HE5JTJYB102K
C18	HE5JTJYB102K
C19	HE12TJYB103K
C20	HE4JTJCH150J
C21	HE4JTJCH120J
C22	HE12TJYB103K
C23	HE12TJYB103K
C24	HE12TJYB103K
C25	HE4JTJYB101K
C26	HE12TJYB103K
C27	HE12TJYB103K
C28	HE12TJYB103K
C29	ECQ-B1H-103-KF
C30	ECQ-Y1H-104-JZ
C31	HE12TJYB103K
C32	HE5JTJYB102K
C33	HE4JTJYB471K
C34	HE5JTJYB102K
C35	HE5JTJYB102K
C36	HE5JTJYB102K
C37	HE5JTJYB102K
C38	HE5JTJYB102K
C39	HE5JTJYB102K
C40	HE5JTJYB102K
C41	ECQ-Y1H-104-JZ
C42	HE12TJYB103K
C43	HE8JTJYB472K

Location No	Specification
C44	ECQ-B1H-103-KF
D1	1SR35-100A
D2	1SR35-100A
D3	1SR35-100A
D4	1SR35-100A
D5	Nil
D6	Nil
D7	1S2473
D8	RK-14
D9	1S2473
D10	1SR35-100A
D11	1S2473
D12	1S2473
D13	1S2473
D14	1S2473
D15	1S2473
D16	1S2473
D17	1S2473
D18	1S2473
D19	1S2473
D20	1S2473
D21	1S2473
D22	1S2473
D23	1S2473
D24	1S2473
D25	1S2473
D26	1S2473
D27	1SR35-100A
D28	1S2473
D29	1S2473
D30	1S2473
D31	1S2473
D32	1S2473
D33	1S2473
D34	1S2473
D35	1SR35-100A
D36	1S2473
ZD1	Nil
ZD2	RD7.5E3
ZD3	RD16EB3
ZD4	RD24EB2
ZD5	RD24EB2
DA1	SB007W03S

Location No.	Specification
Q1	2SD1196
Q2	2SC4640
Q3	2SC4640
Q4	Nil
Q5	Nil
Q6	DTD113ZS
Q7	2SB1240
Q8	2SD1853
Q9	DTC114YS
Q10	DTC114YS
Q11	2SB1240
Q12	DTC114YS
Q13	2SB1240
Q14	DTC114YS
Q15	2SB1240
Q16	DTC114YS
Q17	2SB1240
Q18	2SD1853
X1	C-002FX (M90-76)
X2	C3*4.19MGW
BUZZER	FKM22EPP-2002
L1	PCCRI*19-3(*6)PCCRI5113(*(
CN1	5277-02A
CN2	52045-2345
CN3	52045-2045
CN4	53253-03*0
CN5	IL-G-3P-S3T2-E
CN6	52045-2245
F1	237 315
F1	Nil
F2	U_-TSCR-0.8A

BLOCK DIAGRAM (5/5) E340014


< JAPAN > (JAPAN SPEC.)
(A)
100V
0V
T1
T2
L5T18X6X10
TE-233-E3D
< EUROPE >
(B, F, G)
240V
230V
220V
120V
100V
0V
T1
T2
L5T18X6X10
TE-233-E3U
< US. CANADA > (US. CANADA SPEC.)
(C, L)
120V
0V
T1
T2
L5T18X6X10
TE-233-E4D
< U.K. >
(D)
240V
230V
220V
120V
100V
0V
T1
T2
L5T18X6X10
TE-233-E3U
TO E299-1 (4/5)
< OTHER COUNTRIES > (with Voltage Selector)
(U)
240V
230V
220V
120V
100V
0V
T1
T2
L5T18X6X10
TE-233-E3D
TO E299-1 (4/5)
POWER SUPPLY
E311531



KEY CONTACT POSITION

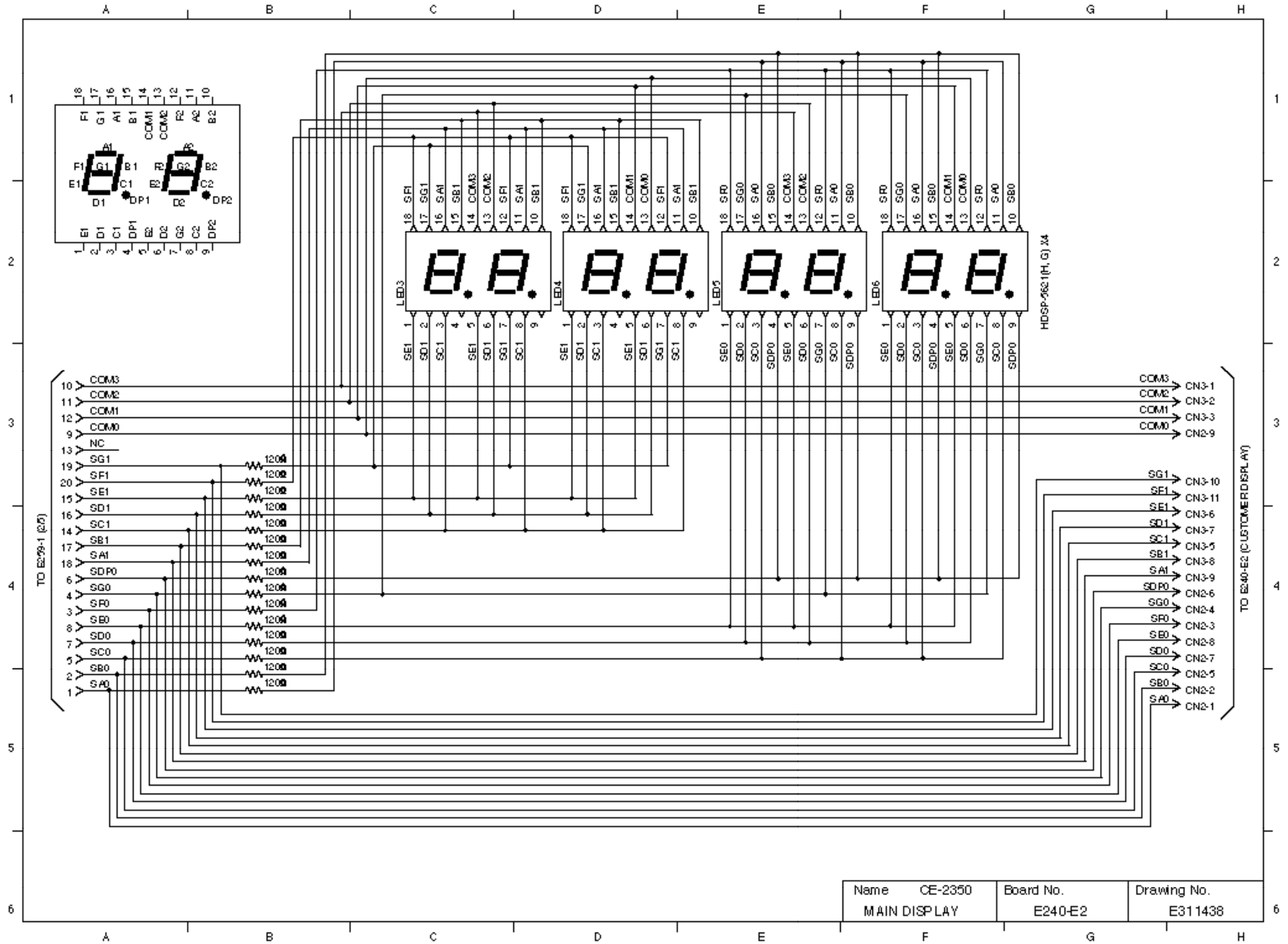
E259-E4

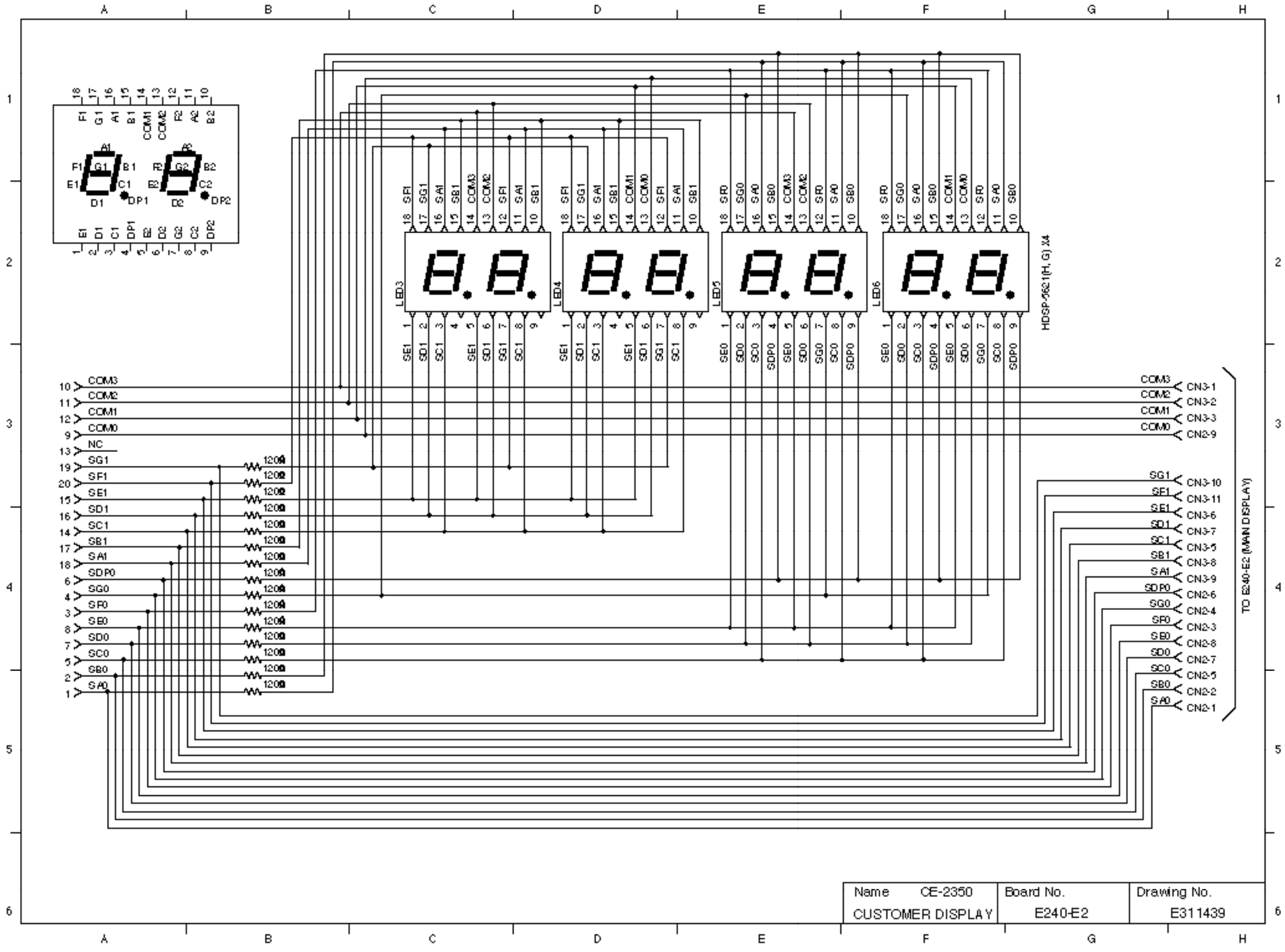
RFEED 49	JFEED 50
39	40
29	30
19	20
9	10

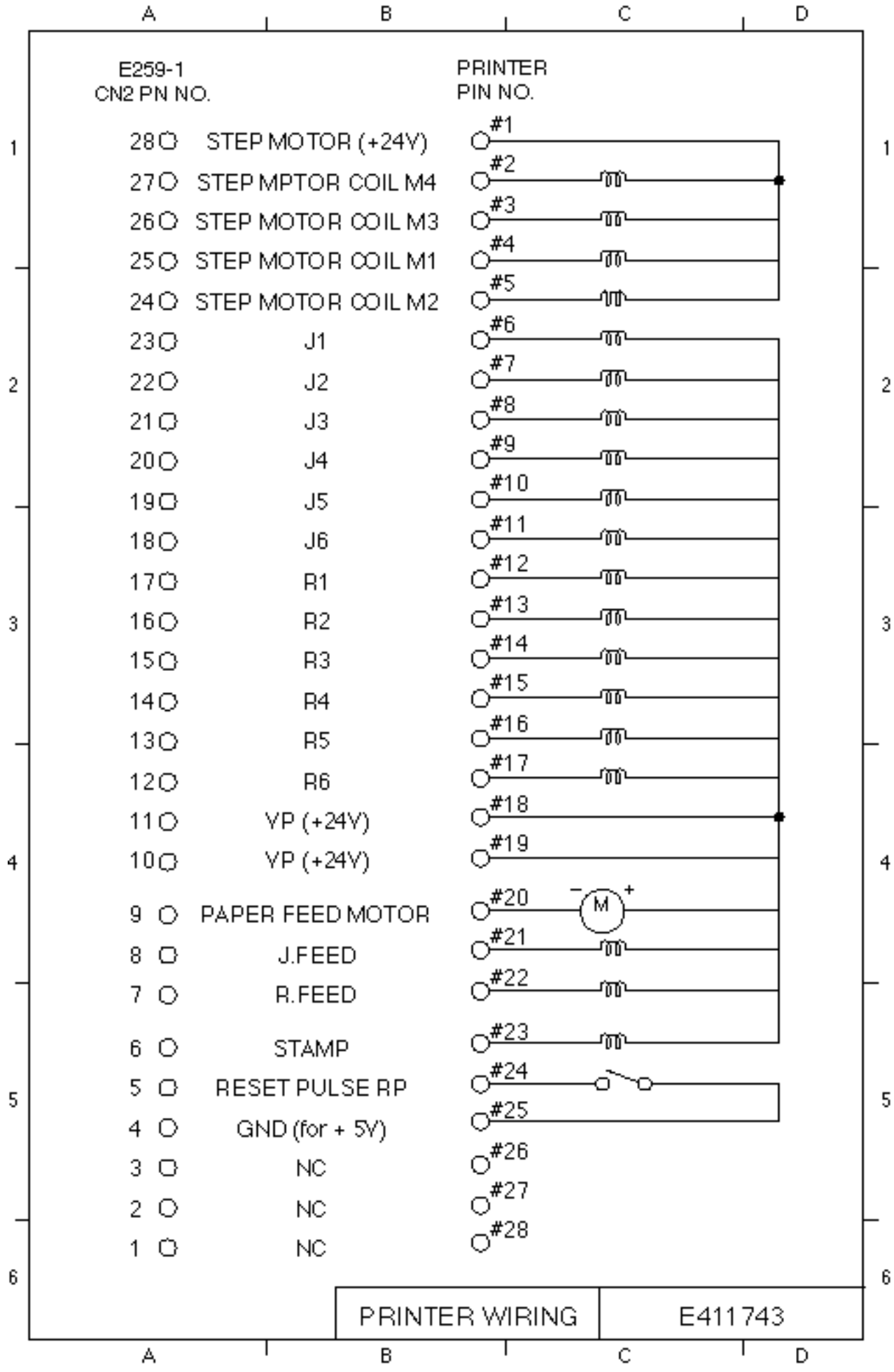
41	42	43
31	32	33
21	22	23
11	12	13
1	2	3

51	52	53	54	55
44	45	46	47	48
34	35	36	37	38
24	25	26	27	28
14	15	16	17	18
4	5	6	7	

KEY BOARD	E340015


HDSP-5621(H, G) X4
LED3
LED4
LED5
LED6
TO E259-1 (2/5)
TO E240-E2 (CUSTOMER DISPLAY)
COM3
COM2
COM1
COM0
NC
SG1
SF1
SE1
SD1
SC1
SB1
SA1
SDP0
SG0
SF0
SB0
SD0
SC0
SB0
SA0
120Ω
CN3-1
CN3-2
CN3-3
CN2-9
CN3-10
CN3-11
CN3-6
CN3-7
CN3-5
CN3-8
CN3-9
CN2-6
CN2-4
CN2-3
CN2-8
CN2-7
CN2-5
CN2-2
CN2-1
Name CE-2350
MAIN DISPLAY
Board No.
E240-E2
Drawing No.
E311438


HDSP-5621(H, G) X4
LED3
LED4
LED5
LED6
TO E240-E2 (MAIN DISPLAY)
COM3
COM2
COM1
COM0
NC
SG1
SF1
SE1
SD1
SC1
SB1
SA1
SDP0
SG0
SF0
SE0
SD0
SC0
SB0
SA0
CN3-1
CN3-2
CN3-3
CN2-9
CN3-10
CN3-11
CN3-6
CN3-7
CN3-5
CN3-8
CN3-9
CN2-6
CN2-4
CN2-3
CN2-8
CN2-7
CN2-5
CN2-2
CN2-1
Name CE-2350
CUSTOMER DISPLAY
Board No.
E240-E2
Drawing No.
E311439


A
B
C
D
E259-1
CN2 PN NO.
PRINTER
PIN NO.
28 STEP MOTOR (+24V)
27 STEP MPTOR COIL M4
26 STEP MOTOR COIL M3
25 STEP MOTOR COIL M1
24 STEP MOTOR COIL M2
23 J1
22 J2
21 J3
20 J4
19 J5
18 J6
17 R1
16 R2
15 R3
14 R4
13 R5
12 R6
11 VP (+24V)
10 VP (+24V)
9 PAPER FEED MOTOR
8 J.FEED
7 R.FEED
6 STAMP
5 RESET PULSE RP
4 GND (for + 5V)
3 NC
2 NC
1 NC
#1
#2
#3
#4
#5
#6
#7
#8
#9
#10
#11
#12
#13
#14
#15
#16
#17
#18
#19
#20
#21
#22
#23
#24
#25
#26
#27
#28
M
PRINTER WIRING
E411743

PARTS LIST

MODEL : CE-2350 (EX-259)

CONTENTS

1. Main PCB ass'y 29

2. Main display block 31

3. Customer display block 32

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5. Button block 34

6. Power supply block 36

7. Upper case block 37

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9. Printer unit 40

10. Drawer 42

NOTES :

1. Price and specifications are subject to change withput prior notice.

2. As for spare parts order and supply, refer to the "GUIDEBOOK for Spare Parts Supply", published separately.

3. The numbers in item column corespond to the same numbers in drawing.

4. Remarks

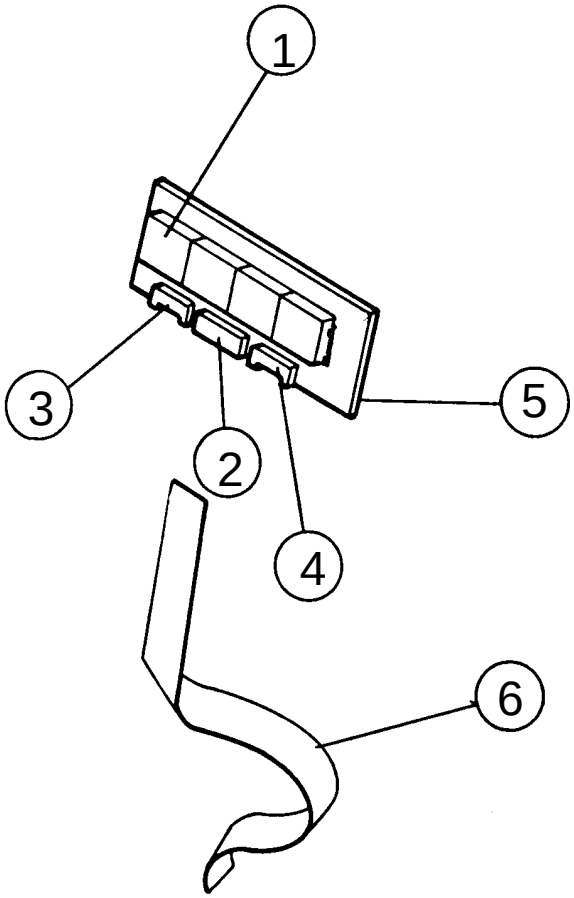
N :	New parts	R :	RANK
Q :	Quantity used per unit		A : Essential
* :	Minimum order/supply quantity		B : Stock recommended
			C : Less recommended
			X : No stock recommended

1.Main PCB assíy

N	Item	Code No.	Parts Name	Specification	Ver.	Q	M	FOB Japan N.R.Yen Unit Price	R
			MAIN PCB ASS'Y						
N		6192 6210	Main PCB ass'y (E259-1)	E211743*1		1			A
	IC11	2006 0717	LSI	LC36256PLL10/12/15		1			A
N	IC5	2006 1039	LSI	UPD75516GF-585-3B9		1			A
	IC13	2101 0189	MOS IC	TC74HC138AP		1			A
	IC10	2105 1071	C-MOS IC	TC74HC174AP		1			A
	IC4	2114 1512	Liner IC	BA10393		1	5		A
	IC7,8,9	2114 2436	Monolythic IC	BA12003		3			A
	IC2	2120 6741	Monolythic IC	BA12004		1			A
	IC1	2120 6823	Liner IC	LM2575T-5.0/LB03		1			A
	IC6	2120 6824	Monolythic IC	STA471A		1			A
	IC12	2120 7381	Reset IC	S-80730AN-Z		1			A
	IC3	2120 9181	Monolythic IC	BA12001		1			A
	Q7,11,13,15,17	2210 7309	Transistor	2SB1240V2-Q,R		5	20		B
	Q2,3	2220 3746	Transistor	2SC4640(T,U)-AC		2	20		B
	Q8,18	2230 4135	Transistor	2SD1853-AA		2			B
	Q1	2230 5336	Transistor	2SD1196		1	5		B
N	Q6	2250 1099	Digital transistor	DTC113ZS-TP-T		1	5		B
	Q9,10,12	2259 0063	Digital transistor	DTC114YS-TP-T		5			B
	Q14,16								
	D1~4,10	2301 0089	Diode	1SR35-100A-T-82-T		7	20		C
	D27,35								
	D7,9,11~26	2301 0101	Diode	1S2473-T-77-T		26	20		C
	D28~34,36								
	ZD3	2310 6728	Zener Diode	RD16EB3-TN-T		1	20		B
	ZD4,5	2310 7229	Zener Diode	RD24EB2-TN-T		2			B
	ZD2	2310 9449	Zener Diode	RD7.5EB3-TN-T		1	20		B
	DA1	2310 9450	Shottky barrier diode	SB007W03S-AC		1			B
	D8	2310 9452	Shottky barrier diode	RK-14V		1			B
	X1	2520 3445	Crystal oscillator	C-002RX(M90-76)		1			A
N	R45~50	2652 1133	Carbon film resistor	CR-25-1OHMJ-T		6	20		X
	R16~19	2652 1140	Carbon film resistor	CR-25-100OHMJ-T		4	10		X
	R73	2652 1147	Carbon film resistor	CR-25-150OHMJ-T		1			X
	R40	2652 1154	Carbon film resistor	CR-25-560OHMJ-T		1	10		X
	R12	2652 1168	Carbon film resistor	CR-25-1KOHMJ-T		4	10		X
N	R10	2652 1175	Carbon film resistor	CR-25-1KOHMG-T		1	20		X
N	R26	2652 1182	Carbon film resistor	CR-25-1.5KOHMJ-T		1	20		X
N	R41,43	2652 1189	Carbon film resistor	CR-25-2KOHMJ-T		2	20		X
N	R13	2652 1196	Carbon film resistor	CR-25-2.7KOHMJ-T		1	20		X
N	R30,32~35	2652 1203	Carbon film resistor	CR-25-3.9KOHMJ-T		8	20		X
	R51~53								
	R55~66	2652 1210	Carbon film resistor	CR-25-4.7KOHMJ-T		12	10		X
N	R8	2652 1217	Carbon film resistor	CR-25-5.1KOHMJ-T		1	20		X
N	R39	2652 1224	Carbon film resistor	CR-25-6.2KOHMJ-T		1	20		X
N	R69	2652 1231	Carbon film resistor	CR-25-8.2KOHMJ-T		1	20		X
N	R11,15,20~24	2652 1238	Carbon film resistor	CR-25-10KOHMJ-T		17	20		X
	R31,36,37,44,68								
	R74~78								
N	R6	2652 1252	Carbon film resistor	CR-25-22KOHMG-T		1	20		X
N	R27,70,71,79	2652 1259	Carbon film resistor	CR-25-56KOHMJ-T		4	20		X
	R14,72	2652 1266	Carbon film resistor	CR-25-100KOHMJ-T		2	10		X
	R38	2652 1273	Carbon film resistor	CR-25-330KOHMJ-T		1	10		X
N	R54	2652 1280	Carbon film resistor	CR-25-1MOHMJ-T		1	20		X
N	R9	2652 1287	Carbon film resistor	R50XT-08J3R9		1	20		X
N	R7	2652 1392	Carbon film resistor	R50XT-08J122		1	20		X
N	R42	2652 2043	Carbon film resistor	CR-25-16KOHM-J-T		1	20		X
	R5	2700 3858	Metal film resistor	CRH200-FH24-J-301		1	20		X
	R67	2700 3859	Metal film resistor	CRH100-FH11-J-6R8		1	10		X
	RA2	2720 4236	Module resistor	MS5635F		1	10		C
	RA3,4	2720 4244	Module resistor	MS5636F		2	10		C
	RA1,5	2730 0021	Module resistor	MS1038F		2	10		C

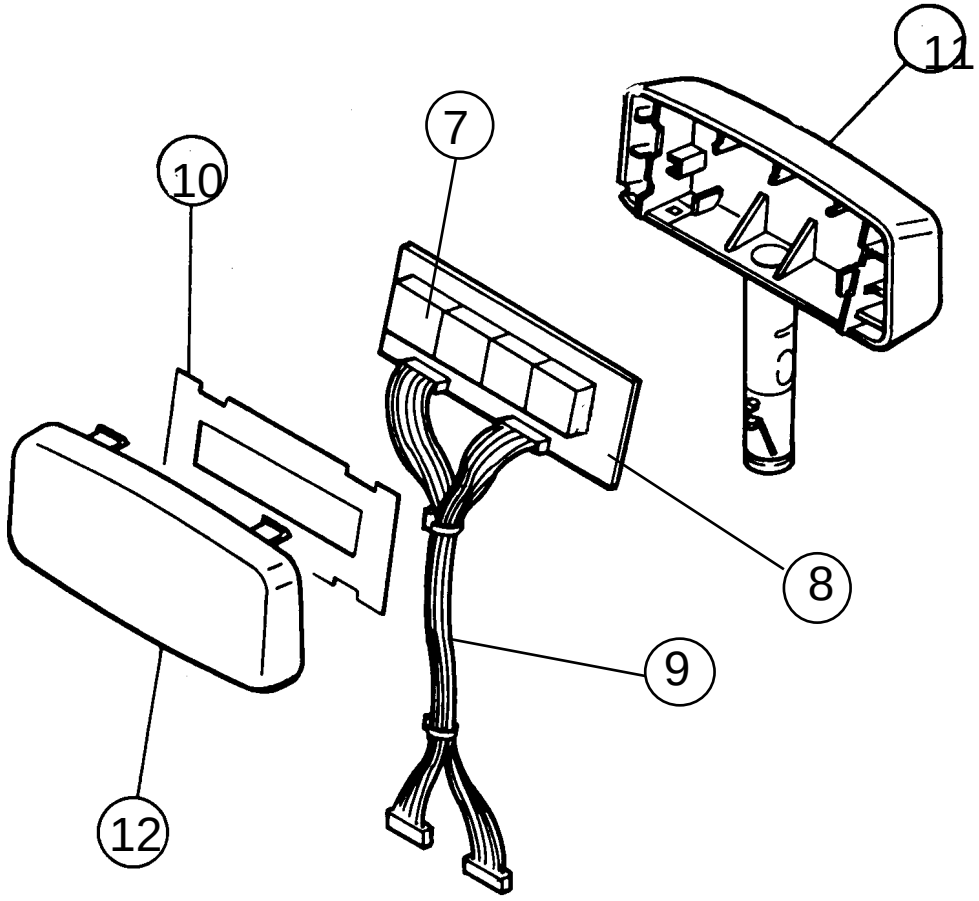
N	Item	Code No.	Parts Name	Specification	Ver.	Q	M	FOB Japan N.R.Yen Unit Price	R
	X2	2801 8932	Ceramic oscillator	CST4.19MGW		1			A
N	C6	2807 2231	Electrolytic capacitor	RE2-50V470M-T2		1	20		C
N	C9	2807 2238	Electrolytic capacitor	RE2-50V010M-T2		1	20		C
N	C8	2807 2245	Electrolytic capacitor	RE2-25V331M-T2		1	10		C
N	C2	2807 2252	Electrolytic capacitor	RE2-35V102M		1			C
N	C1	2807 2259	Electrolytic capacitor	RE3-50V332M		1			C
N	C21	2807 2770	Ceramic capacitor	HE40TJCH120J		1	20		X
N	C13~18,32	2813 0217	Ceramic capacitor	HE50TJYB102K		14	20		X
	C34~40								
N	C20	2818 3881	Ceramic capacitor	HE40TJCH150J		1	20		X
N	C43	2818 3882	Ceramic capacitor	HE80TJYB472K		1	20		X
	C33	2819 0735	Ceramic capacitor	HE40TJYB471K		1	20		X
	C25	2819 0743	Ceramic capacitor	HE40TJYB101K		1	20		X
	C3,5,11,12,19	2819 5542	Ceramic capacitor	HE12TJYB103K		13			X
	C22~24,26~28								
	C31,42								
	C30,41	2820 3233	TF capacitor	ECQ-V1H-104-JZW		2			X
	C10,29,44	2820 3713	TF capacitor	ECQ-B1H103KFW		3	20		X
	C4	2830 5729	Mylar capacitor	50F2S563J		1			X
	F1	3000 6559	Fuse	237 315		1	5		A
	L1	3018 0854	Inductor	MCDR1419-681K		1	5		X
	BUZZER	3122 1589	Sounducer	PKM22EPP-2002		1			C
	CN5	3500 3355	Pin ass'y 3P	IL-G-3P-S3T2-E		1			C
	CN3	3500 5831	PCB connector	52045-2045		1			C
	CN4	3500 7122	Pin ass'y	53253-0310		1	20		C
N	CN2	3501 5460	FFC Connector	52045-2845		1	5		C
N	CN6	3501 5474	FFC connector	52045-2245		1	5		C
	CN1	3510 2680	Pin ass'y 2P	5277-02A		1	20		C
	F2	3631 0328	Fuse	UL-TSCR-0.8A		1			A
	F1	3640 2331	Fuse clip	UF-0033		2	10		X
		3750 1272	Heat sink	OSH-1625-SPL		1			X
N		4308 1067	PCB E259-1 (without components)	E211747-1		1			X
		5041 5155	Screw (+)	3X8 ZMC-3		1	50		X

2. Main display block



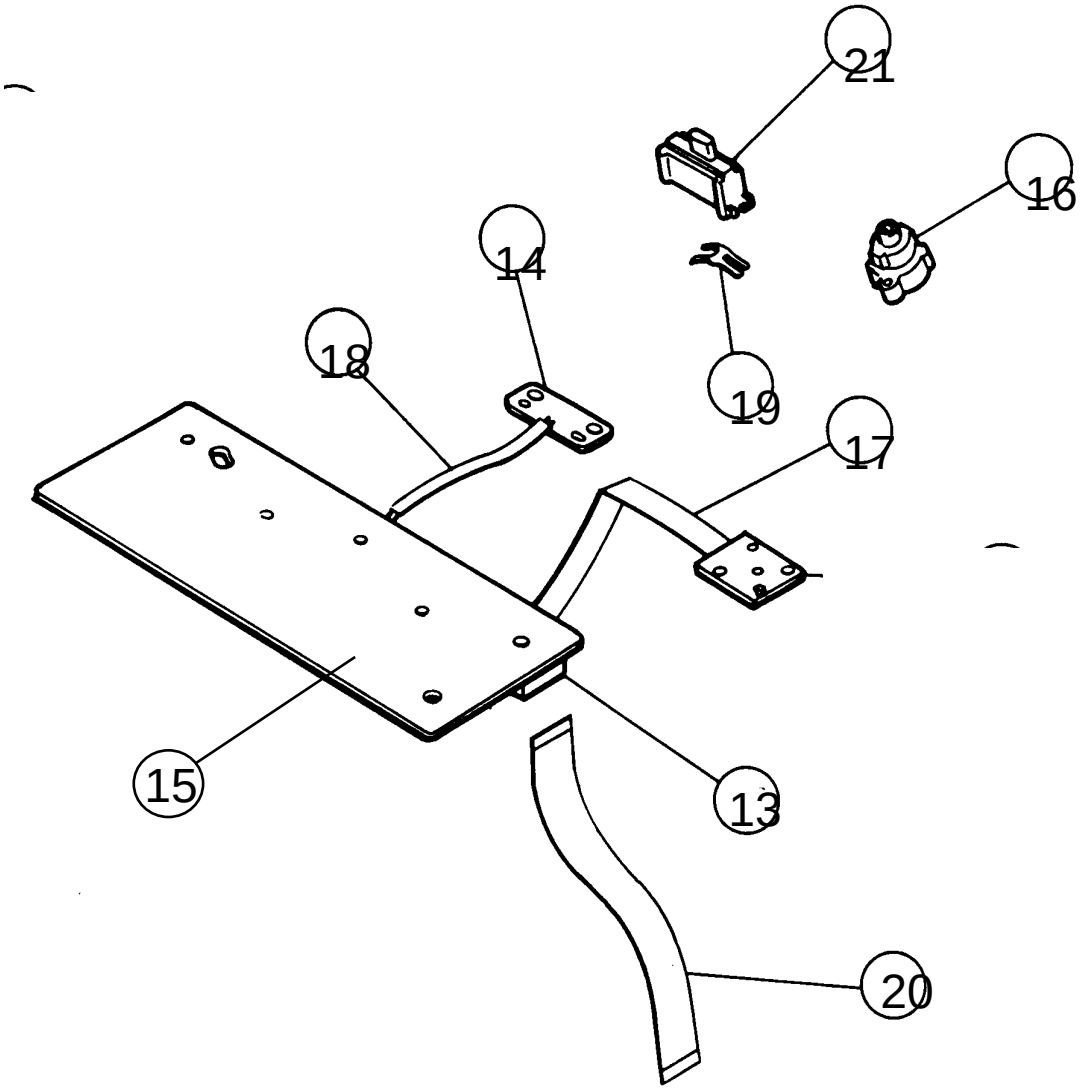
N	Item	Code No.	Parts Name	Specification	Ver.	Q	M	FOB Japan N.R.Yen Unit Price	R
			MAIN DISPLAY BLOCK						
		6191 0091	E240-E2 ass'y	E211153*1		1			C
	1	2320 1365	LED	HDSP-5621#S02		4			A
N		2601 6816	Carbon film resistor	ERD25TJ121V		8	20		X
N		2601 6817	Carbon film resistor	ERDS2TJ121V		7	20		X
	2	3500 5833	PCB connector	52044-2045		1			C
	3	3500 5834	Pin ass'y 9P	53254-0910		1			C
	4	3500 5835	Pin ass'y 11P	53254-1110		1			C
	5	4306 1004	PCB E240-E2 (without components)	E311067A-1		1			X
	6	6221 3899	FFC joiner A	E411354-4		1			A

3. Customer display block



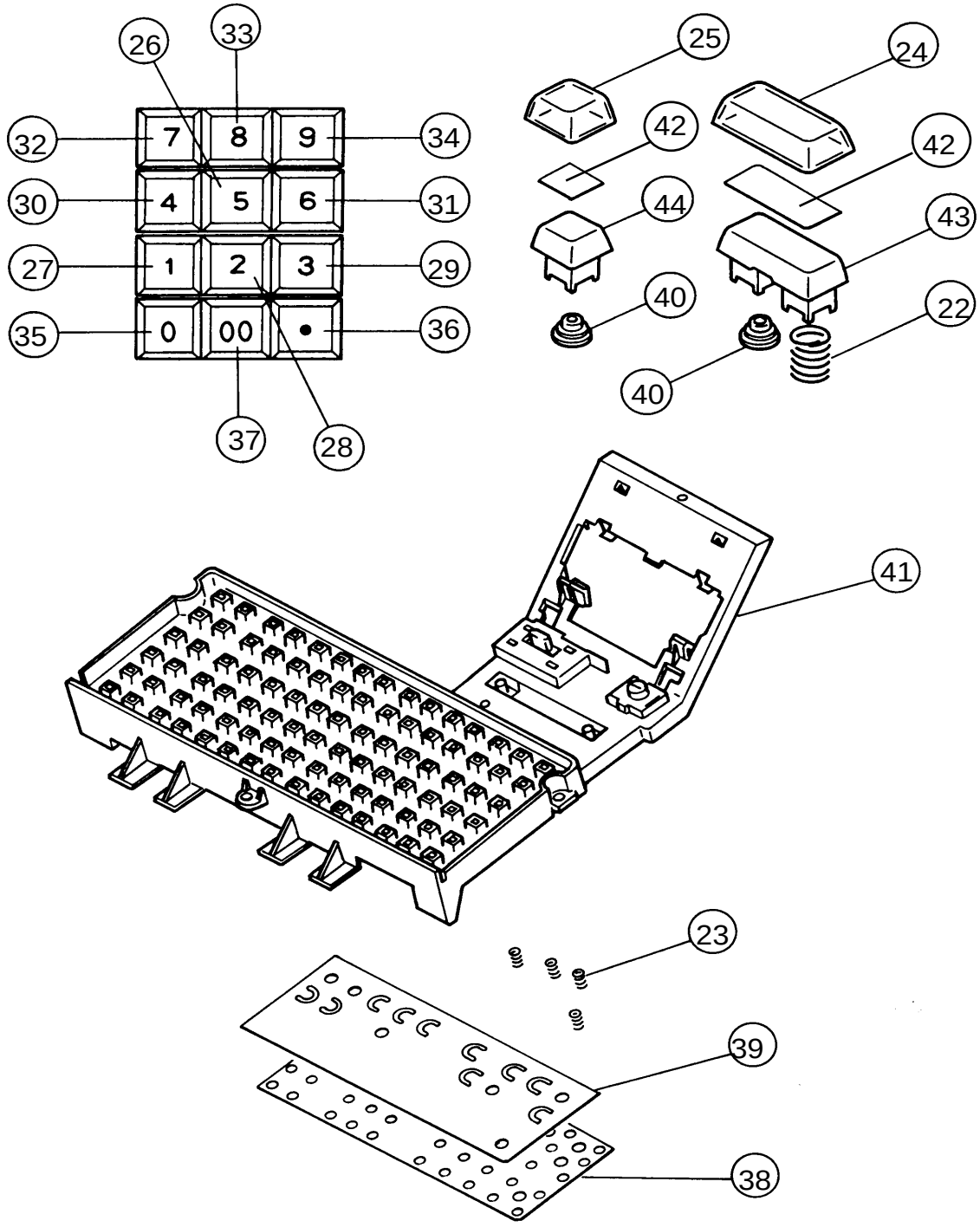
N	Item	Code No.	Parts Name	Specification	Ver.	Q	M	FOB Japan N.R.Yen Unit Price	R
			CUSTOMER DISPLAY BLOCK						
		6191 0092	E240-E2 ass'y	E211153*2		1			C
	7	2320 1365	LED	HDSP-5621#S02		4			A
N		2601 6816	Carbon film resistor	ERD25TJ121V		8	20		X
N		2601 6817	Carbon film resistor	ERDS2TJ121V		7	20		X
	8	4306 1004	PCB E240-E2 (without components)	E311067A-1		1			X
	9	6191 0334	Display connector ass'y	E311301*1		1			B
	10	6221 4059	Blind sheet R	E311214-1		1	20		X
	11	6245 5470	Display case	E210920B-1		1			X
	12	6246 3170	Rear case B	E210921B-2		1			C

4. Keyboard block



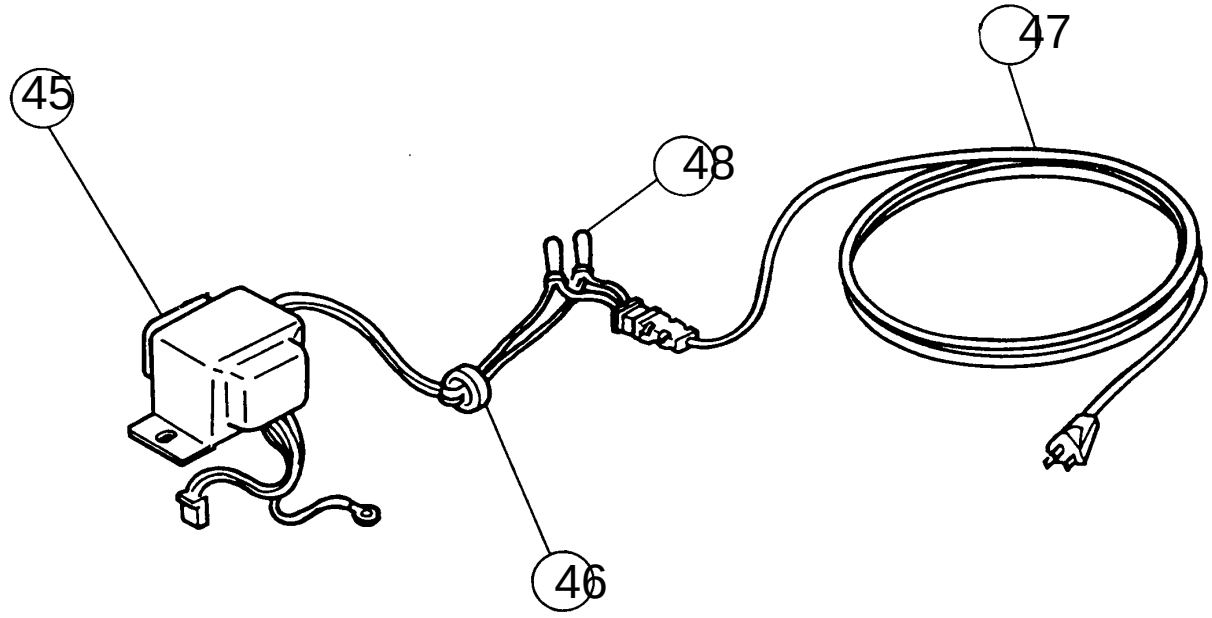
N	Item	Code No.	Parts Name	Specification	Ver.	Q	M	FOB Japan N.R.Yen Unit Price	R
			KEYBOARD BLOCK						
N	13	3501 5474	FFC connector	52045-2245		1	5		A
	14	4306 1013	PCB E241-E3-2 (without components)	E311071A-1		1	10		X
N	15	4308 1074	PCB E241-E4 (without components)	E312009-1		1			C
	16	6191 0102	Mode key switch ass'y	E311288*1		1			C
	17	6231 9577	PC joiner A	E411356A-1		1	10		A
	18	6231 9578	PC joiner B	E411356A-2		1	20		A
	19	6029 0326	Switch contact spring	A4897C-1		1	10		C
		5111 5760	Tapping screw (+) (for mode key)	2.6X8 ZMC-3..		2	50		X
		5112 0124	Screw with washer (for keyboard)	3X8 ZMC-3.....		6	20		X
N	20	6246 4790	FFC joiner	E412212-2		1			A
	21	6221 4758	Slide knob	E311468-1		1			X

5. Button block



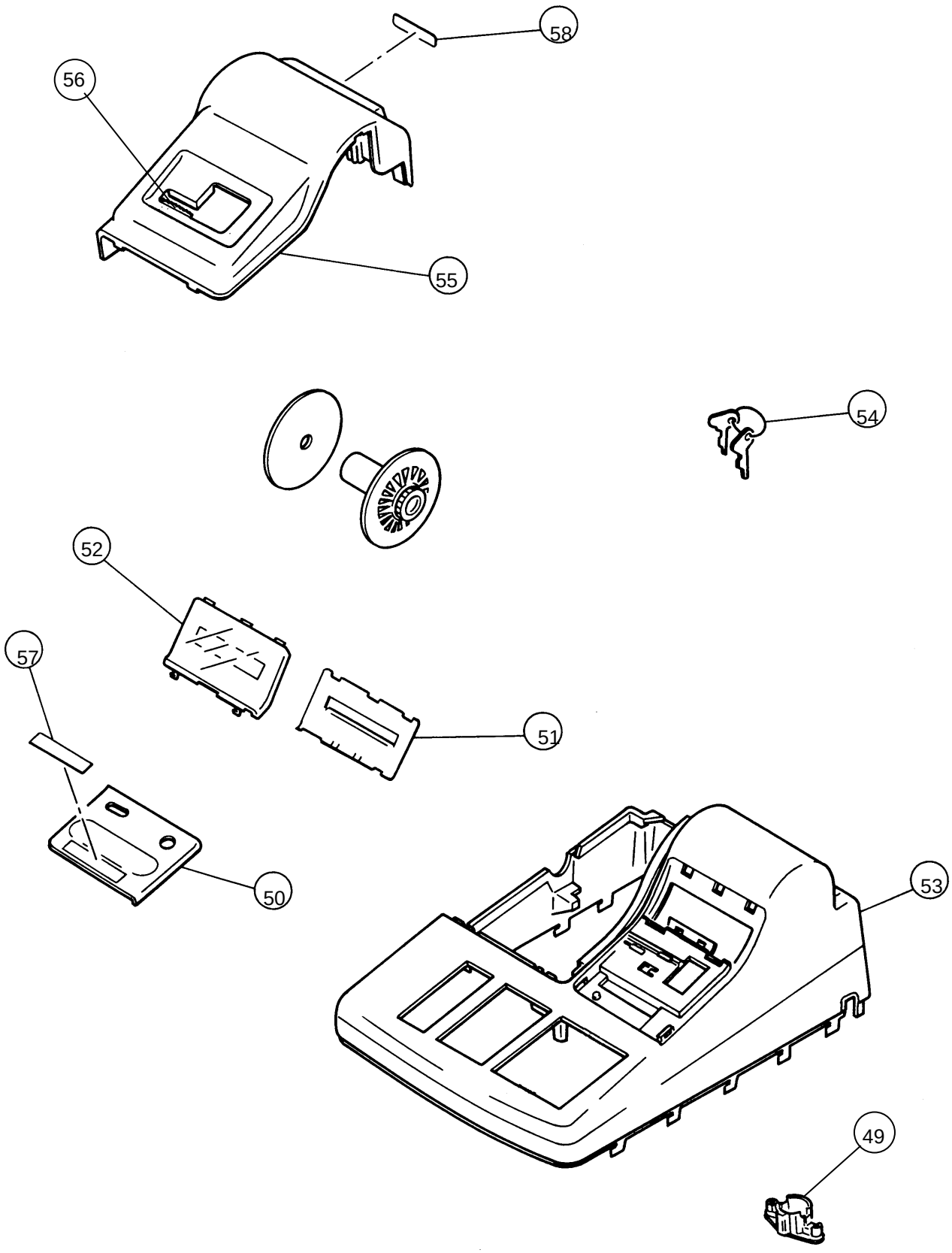
N	Item	Code No.	Parts Name	Specification	Ver.	Q	M	FOB Japan N.R.Yen Unit Price	R
			BUTTON BLOCK						
	22	6221 0630	Coil spring A	E411104-1		1			C
	23	6221 0648	Coil spring B	E411104-2		10			C
	24	6221 3988	L cap	E210964-1		1			C
	25	6221 4025	S cap	E311103-1		41			C
	26	6221 4356	S button 5	E311116-3		1			C
	27	6221 4360	S button 1	E311279-1		1			C
	28	6221 4361	S button 2	E311279-2		1			C
	29	6221 4362	S button 3	E311279-3		1			C
	30	6221 4363	S button 4	E311279-4		1			C
	31	6221 4364	S button 6	E311279-5		1			C
	32	6221 4365	S button 7	E311279-6		1			C
	33	6221 4366	S button 8	E311279-7		1			C
	34	6221 4367	S button 9	E311279-8		1			C
	35	6221 4368	S button 0	E311279-9		1			C
	36	6221 4369	S button .	E311279-10		1			C
	37	6221 4370	S button 00	E311279-11		1			C
	38	6221 4420	Spacer	E311240-1		1	10		A
	39	6221 4421	Common sheet	E311241-1		1			A
	40	6221 5086	Contact rubber	E411820-1		54			A
N		6246 2000	Button filer S	E412129-2		2	5		C
N	41	6246 3140	Button frame	E110218B-1		1			X
N	42	6246 5470	Plate sub ass'y	E312031A*1	U.S.A.	1			C
N	42	6246 5480	Plate sub ass'y	E312031A*2	Canada	1			C
N	43	6246 7761	L button	E210963A-3		1	10		C
N	44	6246 7803	S button	E311101A-3		53	20		C

6. Power supply block



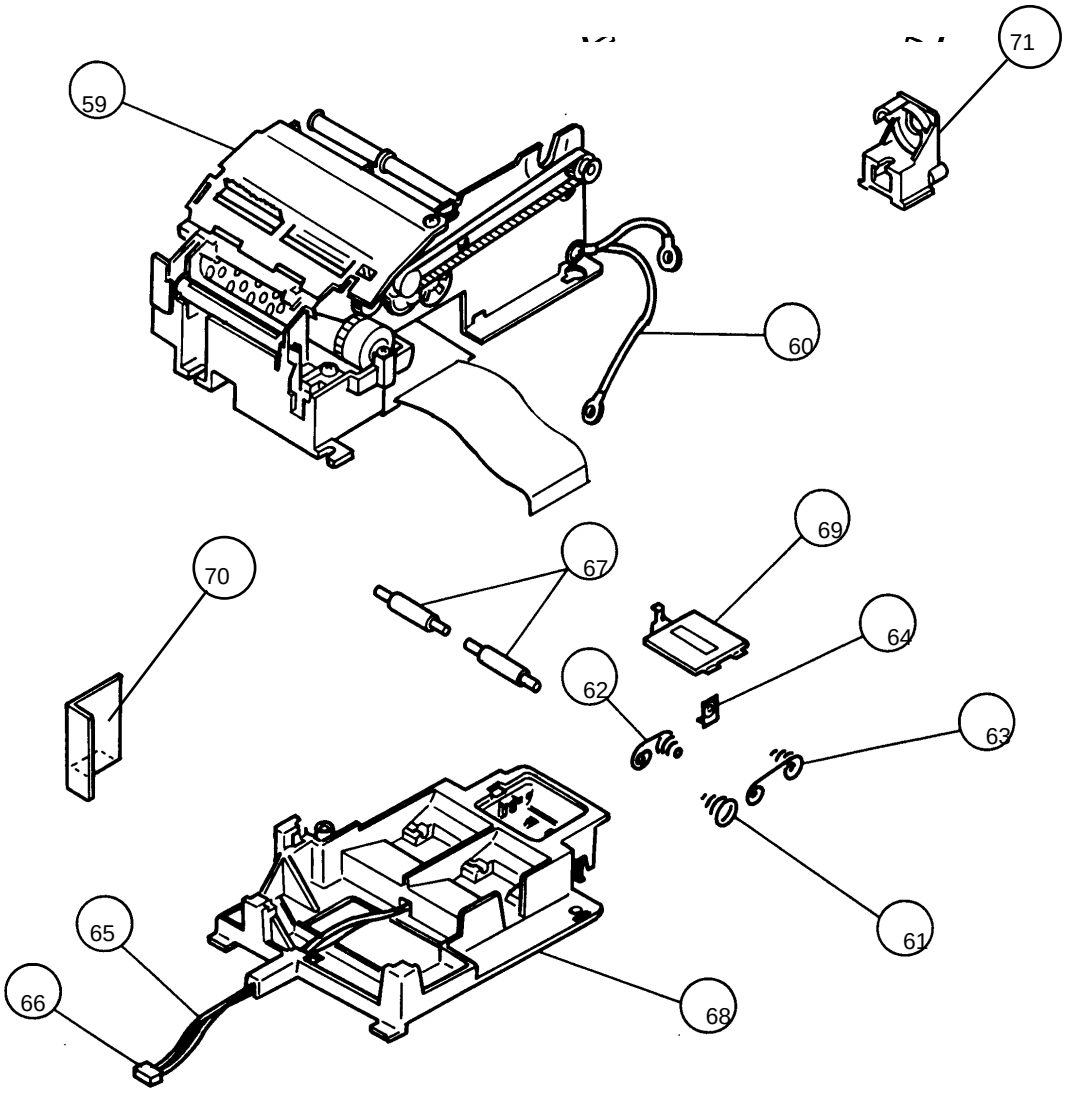
N	Item	Code No.	Parts Name	Specification	Ver.	Q	M	FOB Japan N.R.Yen Unit Price	R
			POWER SUPPLY BLOCK						
	45	3000 3020	Power transformer	TE-233-E4D		1			A
	46	3030 4055	Ferrite core	L5T18X6X10		1			X
	47	3700 4281	Power cord	PS204		1			C
	48	5530 0526	Cable joiner	CE2		2	10		X

7. Upper case block



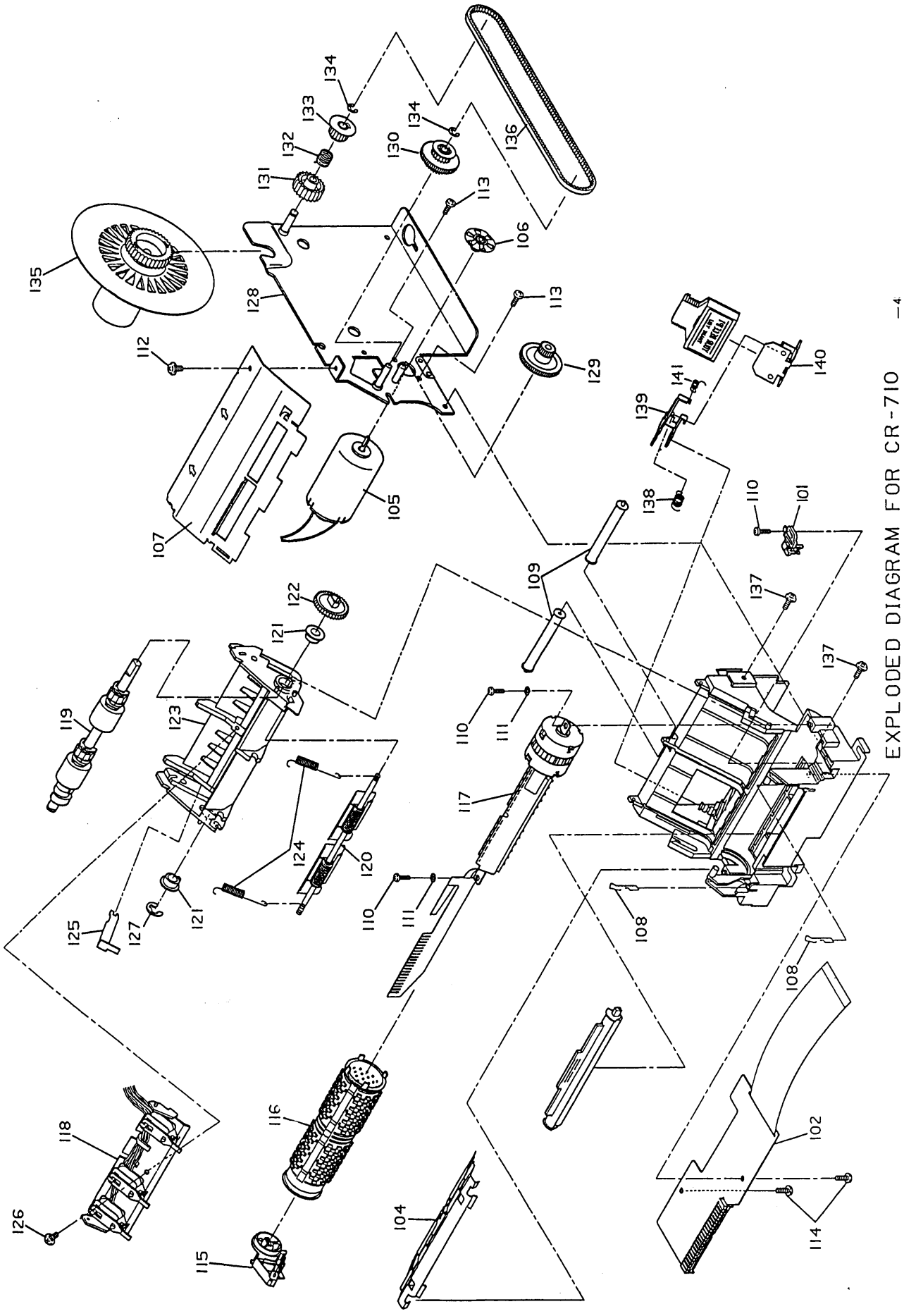
N	Item	Code No.	Parts Name	Specification	Ver.	Q	M	FOB Japan N.R.Yen Unit Price	R
			UPPER CASE BLOCK						
		5111 2714	Screw with washer	3X20 ZMC-3..		2	20		X
		5112 0124	Screw with washer	3X8 ZMC-3.....		5	20		X
	49	6220 2505	Display bush	E310377-1		1	5		X
	50	6221 3884	Mode cover B	E210953-2		1			C
	51	6221 4061	Blind seal	E311215-1		1	20		X
N	52	6246 3330	Display window A	E210952A-10		1			B
N	53	6246 4740	Upper case	E110216-10		1			X
	54	6218 4957	Key set sub ass'y	E44596A*1		1			B
		6218 4965	OP key	E44549-1		2			B
		6218 4973	OW key	E44549-3		2			B
N	55	6221 3878	Printer cover	E110217-1		1			C
	56	6216 1949	Paper cutter	E42778-1		1	10		C
N	57	6246 4780	Name plate	E412211-3		1	10		X
	58	6221 3812	Name label	E411379-1		1			X

8. Printer block / Printer fixing block / Others



N	Item	Code No.	Parts Name	Specification	Ver.	Q	M	FOB Japan N.R.Yen Unit Price	R
			PRINTER BLOCK						
N	59	1000 8141	Printer unit	CR-710-001MA		1			A
		5150 1637	Screw	4X8 ZMC-3...		1	20		X
N	60	6191 0077	FG wire ass'y	E411673*1		1	5		X
			PRINTER FIXING BLOCK						
	61	6000 6091	Battery spring G67	A43656-1		1	10		C
	62	6001 0862	Battery spring B-1	P408-1		1	10		C
	63	6001 0871	Battery spring B-2	P409-1		1	10		C
	64	6322 4499	Battery spring A	A42606-1		1	10		C
N	65	6191 0080	Lead wire ass'y	E411694*1		1	20		C
N	66	6191 0081	Connector ass'y	E411695*1		1	10		C
	67	6221 4762	Paper roller	E411696-1		2	10		C
	68	6231 9641	Printer fixing stand	E210951A-1		1			X
	69	6221 3888	Battery cover	E311096-1		1	10		B
	70	6221 4069	Printer earth plate	E411500-1		1	5		X
			OTHERS						
	71	6221 3886	V/B connector fixing plate	E311094-1		1	5		X
		5112 0043	Screw with washer	3X8 ZMC-3		9			X
		5112 0132	Screw with washer	3X10 ZMC-3...		1			X
N		5440 0196	Screw	3X8.ZMC-3		1	20		X
		5550 1424	locking spacer	SPLS-8		5	20		X
		5900 0419	Washer	4		2	20		X
N		5111 2716	Screw with washer	3X32 ZMC-3		1	20		X
		5112 0035	Screw with washer	4X6 ZMC-3		3	20		X
		5112 0043	Screw with washer	3X8 ZMC-3		2			X
N		5150 1631	Washer	6.6Xÿ 17X1.2 ZMC-3		1	20		X
		5900 0419	Washer	4		3	20		X

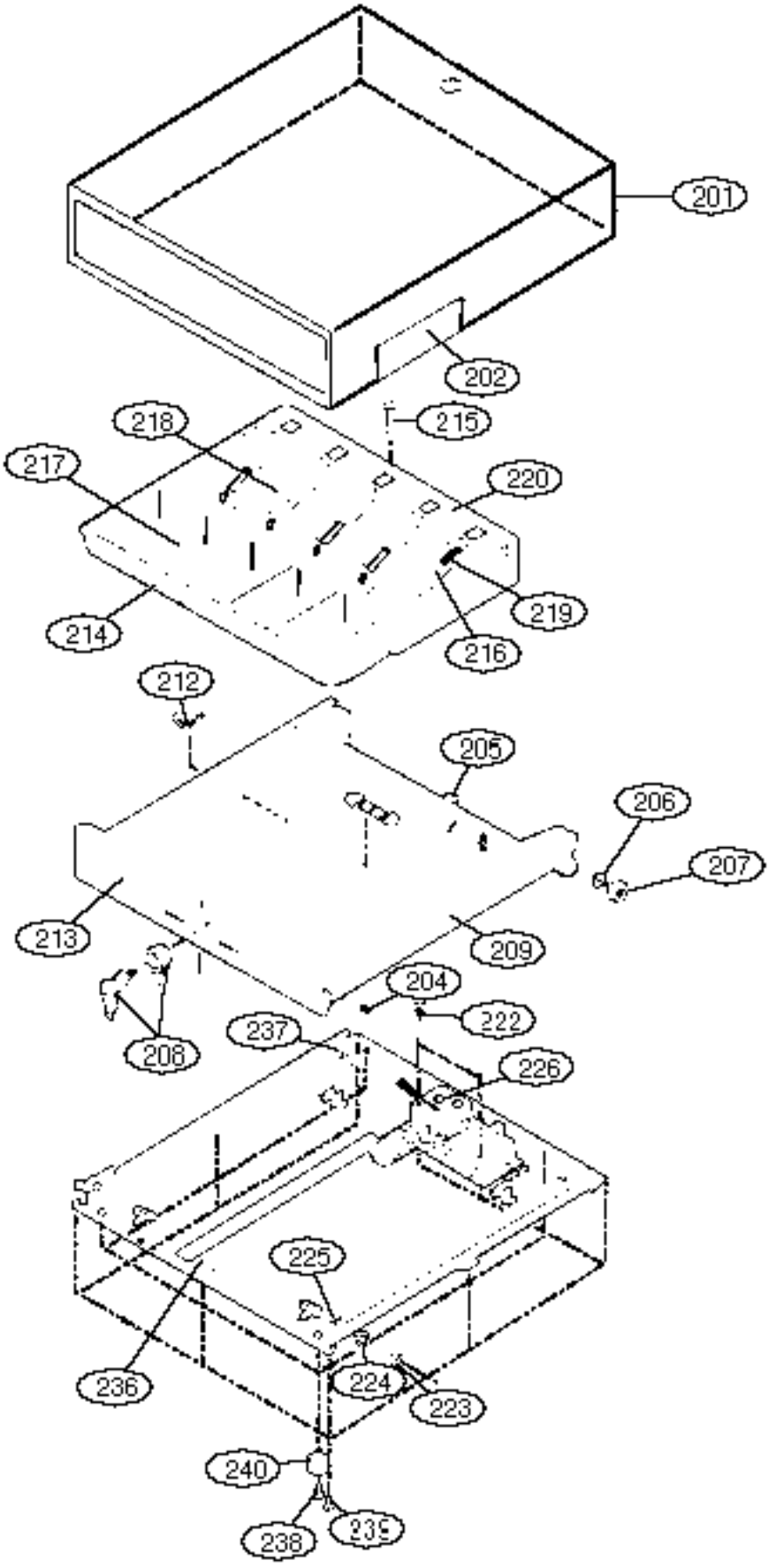
9. Printer unit



N	Item	Code No.	Parts Name	Specification	Ver.	Q	M	FOB Japan N.R.Yen Unit Price	R
	101	1909 1665	Derent pawl ass'y	F750003000		1			X
	102	1909 1666	Board ass'y A	F750004000		1			X
	104	1909 1667	Paper guide ass'y	F750006000		1			B
	105	1909 1668	Paper feed motor	F750005020		1			A
	106	1909 1669	First reduction gear	F750005030		1	10		A
	107	1909 1670	Printer cover	F750005040		1			X
	108	1909 1671	Ink roll spring	F750005050		2	10		X
	109	1909 1672	Paper inlet roller	F750005060		2	5		X
	110	1903 0733	C.T.B. screw M2.5 x 8	B012601011		3	50		X
	111	1909 1673	Outside toothed lock washer M2.6	B090650112		2	20		X
	112	1908 5554	C.C.S. screw M3 x 5	B300304111		1	20		X
	113	1903 0632	C.B.screw M3 x 4	B010350111		2	50		X
	114	1909 1674	C.T.B. screw 3 x 6	B013001611		2	20		X
	115	1909 1675	R detector ass'y	F750055000		1			A
	116	1909 1676	Typeface sheet receptocle ass'y C	M751001020		1			A
	117	1909 1677	Typeface motor print ass'y A	F750651000		1			A
	118	1909 1678	Paper feed trigger ass'y	F750252000		1			X
	119	1909 1679	Paper feed shaft ass'y	F750254000		1			A
	120	1909 1680	Paper hold roller shaft ass'y	F750255000		1			X
	121	1903 0140	Paper feeding shaft holder	F701252020		2			X
	122	1909 1681	Paper feed gear	F750251010		1	5		A
	123	1909 1682	Paper feed frame	F750251020		1			X
	124	1909 1683	Paper hold spring	F750251030		2	10		X
	125	1909 1684	No.1 stamp drive lever	F750251040		1	5		X
	126	1909 1674	C.T.B. screw 3x 6	B013001611		1	20		X
	127	1903 0788	Retaining ring Type-E (5)	B150300811		1	50		X
	128	1909 1685	Take-up frame sub ass'y	F751303000		1			X
	129	1909 1686	Second reduction gear A	F750302010		1	5		C
	130	1909 1687	Second reduction gear B	F750302020		1	5		C
	131	1909 1688	Paper take-up drive gear	F750302030		1	10		C
	132	1909 1689	Roller torque spring	F750302040		1			X
	133	1909 1690	Paper take-up drive pulley	F750302050		1	10		C
	134	1903 0787	Retaining ring Type-E(3)	B150300611		2	50		X
	135	1903 0177	Paper roller shaft	F703301010		1			X
	136	1909 1691	Paper take-up belt	F244307030		1			C
	137	1908 5554	C.C.S. screw M3 x 5	B300304111		2	20		X
	138	1909 1692	Stamp force adjustment spring	F750451010		1	20		X
	139	1909 1693	No.2 stamp drive lever	F750451020		1			X
	140	1909 1624	Stamp lever	F240251020		1			X
	141	1909 1694	Stamp return spring	F750451030		1	20		X

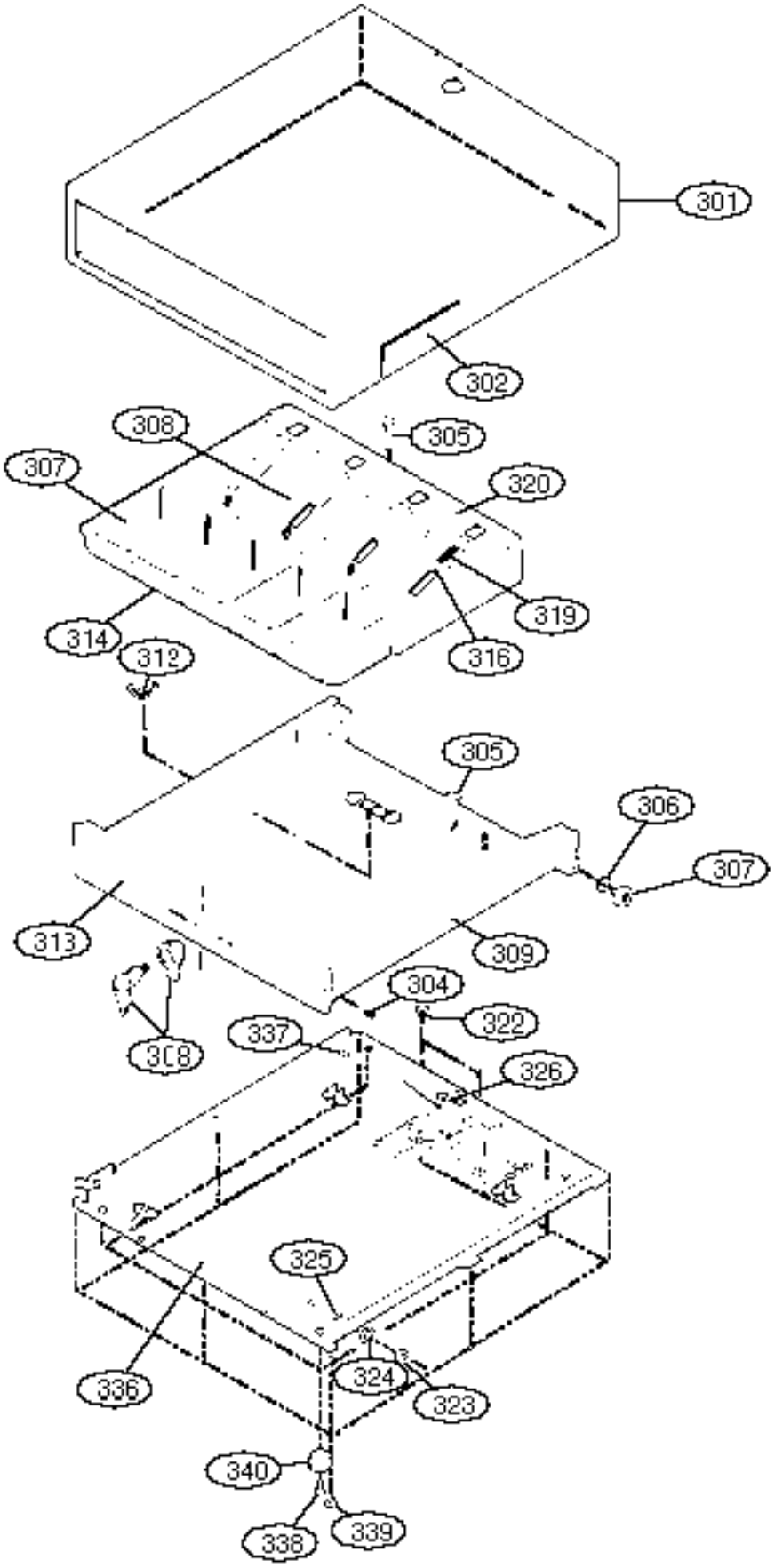
10. Drawer unit

10-1. DL-2417 (for U.S.A.)



N	Item	Code No.	Parts Name	Specification	M	Q	FOB Japan N.R. Yen Unit Price	R
		DL-2416 (U.S.A.)						
	201	6246 5070	Box sub ass'y	E311975*1	1	1		X
	203	6192 6330	Drawer ass'y	E311955*2	1	1		C
	202	6246 5140	Drawer label DL-2416	E311977-4	50	1		X
	240	6221 4893	Rubber foot	ZD01013-A	5	4		X
	239	5150 1645	Screw with washer	3X5 ZMC-3...	50	10		C
	238	5150 1644	Screw with washer	4X16 ZMC-3...	50	4		C
	209	6246 4950	Drawer sub ass'y	E311927*1	1	1		C
	206	5301 5018	Washer	6X13X1 ZMC-3	50	2		X
	204	5150 1652	Tapping screw (+)	3.5X8 ZMC-3	50	2		X
	205	5200 0106	Rivet	5X30	50	1		X
	207	5800 0043	Roller	DR-19B-1.0	5	2		B
	212	6246 5030	Earth spring	E412092-1	50	1		X
	213	6246 4860	Front panel	E211607-2	1	1		X
	208	6221 4900	Cylinder lock	ZD20025	1	1		C
	214	6192 6350	Bill/Coin case ass'y	E110387*2	1	1		C
	218	6221 4911	Partition plate	ZD43652	1	4		B
	216	6221 4902	Bill holder	ZD18931	50	5		A
	217	6221 4909	Bill/Coin case	ZD43651	1	1		C
	219	6246 5220	Bill holder spring	E412160-1	1	5		A
	220	6246 5240	Bill holder fixing plate	E211621-1	1	1		C
	215	5860 0679	Tapping screw (+)	3X8 ZMC-3	50	3		X
		6192 6287	Bottom plate ass'y	E211678*7	1	1		C
	236	6246 4900	Bottom plate	E211623-1	1	1		X
	237	6246 5040	Damper rubber	E412117-1	50	4		X
	225	5500 0619	Roller	DR-19B1	5	2		A
	223	5150 1643	Hexagonal nut	6...	50	2		X
	224	5301 5018	Flat washer	6X13X1 ZMC-3	50	2		X
	222	5112 0035	Screw with washer	4X6 ZMC-3	50	2		X
	226	6192 6317	Lock ass'y	E211680*5	1	1		C
	231	6246 4890	Lock fixing stand	E211622-1	1	1		X
	234	6246 5020	Hook lever shaft	E412071-1	50	1		X
	232	6246 4940	Hook lever	E311876-1	5	1		X
	233	6246 5010	Push spring	E412069-1	50	1		C
	230	5580 1461	Lock spring	ZD03441-A	50	1		C
	228	5161 5123	Screw (+)	3X8 ZMC-3	50	2		X
	229	5440 0224	Screw with washer	4X14 ZMC-3	50	1		X
		3000 7231	Micro switch	V-103-1A5	1	1		C
		5150 1649	Screw with washer	3X16 ZMC-3	50	1		C

10-2. DL-2351 (for Canada)



N	Item	Code No.	Parts Name	Specification	M	Q	FOB Japan N.R. Yen Unit Price	R
		DL-2351 (Canada)						
	301	6246 5070	Box sub ass'y	E311975*1	1	1		X
	303	6192 6330	Drawer ass'y	E311955*2	1	1		C
	302	6246 5150	Drawer label DL-2351	E311977-5	50	1		X
	340	6221 4893	Rubber foot	ZD01013-A	5	4		X
	339	5150 1645	Screw with washer	3 X 5 ZMC-3...	50	10		C
	338	5150 1644	Screw with washer	4 X 16 ZMC-3...	50	4		C
	309	6246 4950	Drawer sub ass'y	E311927*1	1	1		C
	306	5301 5018	Washer	6X13X1 ZMC-3	50	2		X
	304	5150 1652	Tapping screw (+)	3.5X8 ZMC-3	50	2		X
	305	5200 0106	Rivet	5X30	50	1		X
	307	5800 0043	Roller	DR-19B-1.0	5	2		B
	312	6246 5030	Earth spring	E412092-1	50	1		X
	313	6246 4860	Front panel	E211607-2	1	1		X
	308	6221 4900	Cylinder lock	ZD20025	1	1		C
	314	6192 6340	Bill/Coin case ass'y	E110387*1	1	1		C
	315	5860 0679	Tapping screw (+)	3X8 ZMC-3	50	3		X
	316	6221 4902	Bill holder	ZD18931	50	4		A
	317	6221 4909	Bill coin case	ZD43651	1	1		C
	318	6221 4911	Partition plate	ZD43652	1	3		B
	319	6246 5220	Bill holder spring	E412160-1	1	4		A
	320	6246 5230	Bill holder fixing plate	E221620-1	1	1		C
		6192 6287	Bottom plate ass'y	E211678*7	1	1		C
	336	6246 4900	Bottom plate	E211623-1	1	1		X
	337	6246 5040	Damper rubber	E412117-1	50	4		X
	325	5500 0619	Roller	DR-19B1	5	2		A
	323	5150 1643	Hexagonal nut	6...	50	2		X
	324	5301 5018	Flat washer	6X13X1 ZMC-3	50	2		X
	322	5112 0035	Screw with washer	4X6 ZMC-3	50	2		X
	326	6192 6317	Lock ass'y	E211680*5	1	1		C
	331	6246 4890	Lock fixing stand	E211622-1	1	1		X
	334	6246 5020	Hook lever shaft	E412071-1	50	1		X
	332	6246 4940	Hook lever	E311876-1	5	1		X
	333	6246 5010	Push spring	E412069-1	50	1		C
	330	5580 1461	Lock spring	ZD03441-A	50	1		C
	328	5161 5123	Screw (+)	3X8 ZMC-3	50	2		X
	329	5440 0224	Screw with washer	4X14 ZMC-3	50	1		X
		3000 7231	Micro switch	V-103-1A5	1	1		C
		5150 1649	Screw with washer	3X16 ZMC-3	50	1		C